

SCIENCE AND TECHNOLOGY COMMITTEE

Fourth Report

THE SCIENTIFIC ADVISORY SYSTEM

Report, Proceedings of the Committee and Appendices

*Ordered by The House of Commons to be printed
12 March 2001*

PUBLISHED BY AUTHORITY OF THE HOUSE OF COMMONS
LONDON – THE STATIONERY OFFICE LIMITED

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Fourth Report

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The Science and Technology Committee is appointed to examine on behalf of the House of Commons the expenditure, administration and policy of the Office of Science and Technology (and any associated public bodies). Its constitution and powers are set out in House of Commons Standing Order No. 152.

The Committee has a maximum of eleven members, of whom the quorum for any formal proceedings is three. The members of the Committee are appointed by the House and unless discharged remain on the Committee until the next dissolution of Parliament. The present membership of the Committee is as follows:¹

Dr Michael Clark MP (*Conservative, Rayleigh*)²
 Sir Paddy Ashdown MP (*Liberal Democrat, Yeovil*)⁶
 Mrs Claire Curtis-Thomas, (*Labour, Crosby*)²
 Dr Ian Gibson MP (*Labour, Norwich North*)²
 Dr Brian Iddon MP (*Labour, Bolton South East*)⁵
 Mr Robert Jackson MP (*Conservative, Wantage*)³
 Dr Lynne Jones MP (*Labour, Birmingham Selly Oak*)²
 Dr Ashok Kumar MP (*Labour, Middlesbrough South and East Cleveland*)²
 Mr Ian Taylor MP (*Conservative, Esher and Walton*)⁴
 Dr Desmond Turner MP (*Labour, Brighton Kemptown*)²
 Dr Alan W Williams MP (*Labour, Carmarthen East and Dinefwr*)²

On 30 July 1997, the Committee elected Dr Michael Clark as its Chairman.

The Committee has the power to require the submission of written evidence and documents, to examine witnesses, and to make Reports to the House. In the footnotes to this Report, references to oral evidence are indicated by 'Q' followed by the question number, references to the written evidence are indicated by 'Evidence' followed by a page number.

The Committee may meet at any time (except when Parliament is prorogued or dissolved) and at any place within the United Kingdom. The Committee may meet concurrently with other committees or sub-committees established under Standing Order No. 152 for the purposes of deliberating, taking evidence or considering draft reports. The Committee may meet concurrently with the House's European Scrutiny Committee (or any of its sub-committees) or the Environmental Audit Committee for the purposes of deliberating or taking evidence. The Committee may exchange documents and evidence with any of these committees, as well as with the House's Public Accounts and Deregulation Committees.

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at www.parliament.uk/commons/selcom/s&thome.htm. A list of Reports of the Committee in the present Parliament is at page xl of this volume.

All correspondence should be addressed to The Clerk of the Science and Technology Committee, Committee Office, 7 Millbank, London SW1P 3JA. The telephone number for general inquiries is: 020 7219 2794; the Committee's e-mail address is: scitechcom@parliament.uk.

¹ Mrs Caroline Spelman MP (*Conservative, Meriden*) was appointed on 14 July 1997 and discharged on 22 June 1998.
 Mr David Atkinson MP (*Conservative, Bournemouth*) was appointed on 14 July 1997 and discharged on 30 November 1998.

Mrs Jacqui Lait MP (*Conservative, Beckenham*) was appointed on 22 June 1998 and discharged on 5 July 1999.
 Mr Nigel Beard MP (*Labour, Bexleyheath and Crayford*) was appointed on 14 July 1997 and discharged on 20 March 2000.

Mr Nigel Jones (*Liberal Democrat, Cheltenham*) was appointed on 14 July 1997 and discharged on 15 May 2000.

² Appointed on 14 July 1997.

³ Appointed on 5 July 1999.

⁴ Appointed on 30 November 1998.

⁵ Appointed on 20 March 2000.

⁶ Appointed on 15 May 2000.

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LIST OF RECOMMENDATIONS AND CONCLUSIONS

1. We commend to other Departments the DETR's example of providing a one year update on progress on implementing the Committee's recommendations. (Paragraph 13)
2. We recommend that the Government give more prominence to the activities of the Council for Science and Technology and respond to its recommendations. (Paragraph 14)
3. We commend the proposal that the Chief Scientific Adviser will write regular "good practice" letters to Permanent Secretaries, and that these will be made public. We recommend that the Government also revise and reissue the *Guidelines 2000* in the light of the Phillips Report and our recommendations. (Paragraph 17)
4. The OST should be more active in encouraging consistency of standards in science policy across Whitehall. ... It is important that Ministers in all relevant Departments should support the OST and strengthen it in its role of co-ordinating science policy across Government. (Paragraph 18)
5. We urge the Government to publish the *Code of Practice for Scientific Advisory Committees* as soon as possible. (Paragraph 19)
6. It is essential that Chief Scientists in Departments should have direct day-to-day access to the Chief Scientific Adviser. (Paragraph 21)
7. We recommend that Government publish an annual list of scientific advisory committees, with details of membership (including registered interests) and terms of reference, perhaps in the annual report on the implementation of the Guidelines. (Paragraph 29)
8. The status accorded different advisory bodies at present appears haphazard. Careful consideration should be given to the formal status of new advisory bodies before they are established. (Paragraph 30)
9. We welcome the new strategic advisory bodies. ... It is essential that Ministers do not hide behind these bodies on issues of policy, for it is Ministers who are responsible for policy decisions. (Paragraph 32)
10. The Government should press for guidelines on scientific advice across the board, along the lines of the OST guidelines, to be adopted at European Commission level. (Paragraph 33)
11. We reiterate the recommendation made in our climate change case study Report, that the Government actively promote the IPCC model of scientific advice in other policy areas of global significance in which there is scientific uncertainty. (Paragraph 34)
12. The Government should make full use of scientific experience abroad, and include experts from abroad on advisory committees, where appropriate. This has rarely been the case in the past. (Paragraph 35)
13. We recommend that the OST ensure that Departments consult the Learned Bodies whenever establishing a new advisory body. (Paragraph 37)
14. The Government must allow a reasonable time for outside bodies to respond to consultation. Furthermore, to demonstrate that the consultation has been genuine,

we recommend that the Government adopt the practice of publishing a summary of the results of consultation. (Paragraph 38)

15. Government should be aware that we will consider using our powers to insist on a memorandum from the Government responding in full to the recommendations made in reports by the Learned Bodies. (Paragraph 39)
16. The Government could also commission reports from the Learned Bodies, where appropriate. (Paragraph 40)
17. Involving the Learned Bodies more closely in the scientific advisory system would be a straightforward way of demonstrating its independence. (Paragraph 40)
18. If advisory committees are not asked the right questions, important scientific information may never be brought to the Government's attention. ... All advisory committees should be allowed to operate more proactively, monitoring developments in scientific research in their field and alerting the Government to relevant change. (Paragraph 41)
19. It is vital that research is adequately co-ordinated, and that any gaps in research needed to inform policy are identified and addressed, with funding made available. The research programme must do more than meet policymakers' current needs for information: it must try to anticipate the advice required in future years. (Paragraph 42)
20. It should be made clear in the terms of reference of advisory bodies that it is their role to look ahead and advise Departments of issues which may face policymakers in years ahead. (Paragraph 43)
21. The Government must take steps to ensure that there is sufficient scientific expertise within the civil service, so that Departments may be "intelligent customers" and have the capacity to interpret and understand the advice they receive. (Paragraph 44)
22. It is incumbent on advisory bodies to present their advice in a way which is clear and comprehensible, while identifying any uncertainty and dissent as well as their consensus view. (Paragraph 45)
23. We believe that the public is well able to understand uncertainties, if they are clearly presented. (Paragraph 47)
24. We welcome the Government's commitment to applying the precautionary principle where appropriate. ... Whether to apply the precautionary principle in a particular case is essentially a political decision, and rightly the responsibility of elected Ministers. While scientists can offer useful advice about the magnitude of the risks involved, public opinion plays a major part in persuading Government to apply – or not to apply – the precautionary principle. (Paragraph 48)
25. The Government must ensure that its response is proportionate to the potential threat. The Minister for Science, through the Chief Scientific Adviser, should ensure that the precautionary principle is properly understood, and applied where appropriate, across Government. (Paragraph 49)
26. The Government must ensure that scientific advice is disseminated effectively amongst policymakers. (Paragraph 50)
27. The Government must offer clear channels for scientists of other disciplines to offer their alternative perspective. (Paragraph 52)

28. We repeat the recommendation made in our report on Climate Change, that clear and transparent channels should be available through which scientists who hold dissenting views can readily communicate their ideas to policymakers and can have confidence that they have been heard. It should be the clear responsibility of advisory committees to draw dissenting views to the attention of Government. (Paragraph 53)
29. Government must ensure that dissident scientists are heard, but not give credence to those who, with media encouragement, are voicing unsubstantiated theories. (Paragraph 54)
30. There is no doubt that there has been a loss of public confidence in the scientific advisory system. ... Restoring public confidence in scientific advice is essential, but it will be a hard, and slow, process. (Paragraph 55)
31. We commend the very significant steps which Government is making to increase openness and transparency. (Paragraph 56)
32. Voluntary disclosure is not enough, if the public is to be convinced that the scientific advisory system is truly transparent. (Paragraph 57)
33. We recommend that there should be a website for the scientific advisory system, with direct links to every advisory committee. (Paragraph 57)
34. Many people do not have access to a computer and for them information published on the internet will not be readily accessible. (Paragraph 57)
35. We endorse the recommendation of the House of Lords Select Committee that the Press Complaints Commission should adopt and promulgate the Royal Society's guidelines for editors. (Paragraph 58)
36. Scientists must learn to communicate better and to present their case to the media. (Paragraph 59)
37. The advisory committees do an enormous amount of valuable work, for little or no reward. We firmly believe that the advice which they give to Government is for the most part of a very high quality. Significant improvements have been made in recent years in the way they operate. Implementation of the new Code of Practice will improve matters further. (Paragraph 60)
38. Whatever the role of the advisory body, it must be clear that responsibility for decision-making lies with the Department, and that accountability for these decisions lies with Ministers. Advisory bodies must not be used as a device by Ministers to shirk difficult policy decisions. (Paragraph 62)
39. We welcome the commitment by the Government to improve both risk assessment and risk management procedures. (Paragraph 63)
40. The Guidelines must stress the importance of including all relevant disciplines on advisory committees, and the Learned Bodies could give invaluable advice here. (Paragraph 64)
41. We recommend that the Government ensure that there is consistency and openness in the remuneration of members of scientific advisory bodies. (Paragraph 66)
42. We recommend that the Research Assessment Exercise and the Teaching Quality Assessment should take account of service on government advisory committees. It is vital that the advisory system should be able to involve scientists during their active working life, and not be dependent on those who are retired. (Paragraph 67)

43. It should be clear that the role of the lay member is to bring an alternative perspective to the committee and not to represent an interest group. ... The Guidelines should clarify that "lay members" can include scientists of other disciplines. (Paragraph 69)
44. We recommend that the norm be for at least two lay members (depending on the size of the committee) to be appointed to scientific advisory committees. The Guidelines should make this explicit. (Paragraph 70)
45. While an interest should not be a bar to membership, there should be clear guidelines for disclosure. (Paragraph 72)
46. We recommend that the revised Guidelines require all advisory committees to publish registers of members' interests. (Paragraph 72)
47. The revised Guidelines should make clear that the requirement to declare interests extends to those in all sectors. (Paragraph 73)
48. We welcome the Government's commitment to a policy of appointments being limited to five years, and being renewable only once. (Paragraph 74)
49. The revised Guidelines should make clear that Departments should ensure that advisory committees do not experience large changes of membership at one time. (Paragraph 74)
50. It is essential that the staff of an advisory committee appreciate that they work for the committee and not for the Department. (Paragraph 75)
51. We recommend that the Government ask each advisory committee to report on the adequacy of its resources, and to make a case for an increase, if they think this necessary. Advisory committees must have the resources they require to operate effectively. (Paragraph 76)
52. We recommend that the Government carry out a review of the advisory committee network and thereafter establish a system of five-yearly reviews for individual committees. (Paragraph 77)
53. It is too soon to say how the research base, or the scientific advisory system, has been affected by the moves to encourage commercialisation in the Public Sector Research Establishments. (Paragraph 78)
54. The Government must avoid dependence on single sources of advice. (Paragraph 79)

FOURTH REPORT

The Science and Technology Committee has agreed to the following Report:—

THE SCIENTIFIC ADVISORY SYSTEM

INTRODUCTION

Background

1. In March 1997, Sir Robert May, then Chief Scientific Adviser to the Government and Head of the Office of Science and Technology (OST), published Guidelines on *The Use of Scientific Advice in Policy Making*. The “May Guidelines” set out key principles for departments to apply in the use and presentation of scientific advice. They were that:

- departments should ensure that their procedures allow the early identification of issues for which scientific advice or research will be needed;
- policy making should draw on the best available scientific advice, from a sufficiently wide range of sources and disciplines;
- there should be a presumption towards openness in explaining the advice and its interpretation.¹

The Guidelines were widely welcomed, but the fact that the Chief Scientific Adviser felt the need to make explicit principles which seem self-evident is perhaps an indication that all was not well with the scientific advisory system at that time.²

2. The May Guidelines were issued against a background of heightened public concern about scientific advice to Government. The scientific advisory system was not new: scientists have been advising Government for many years. But there was increasing concern about the way it operated. In March 1996, ten years after the first identification of Bovine Spongiform Encephalopathy (BSE) and after ten years of maintaining that it was safe to eat beef, the Government acknowledged that BSE had probably been transmitted to humans. There was widespread concern that several expert advisory committees, over a number of years, appeared to have failed to alert the Government, or the public, to the risks of eating beef. Worse, it was suspected that scientific uncertainty had been covered up by politicians and civil servants in order to prevent a food scare. The scientific community was blamed too: science, and the scientific advisory system, appeared to have failed to protect the public. Something had gone seriously wrong.

3. At the same time, there was mounting concern about standards in public life, on the one hand, and on the way in which government quangos operated, on the other. The Nolan Committee had felt the need to restate the general principles which should underpin public life, and had called on all public bodies to establish Codes of Conduct.³ Public confidence in the integrity of Government was at a low ebb.

Our inquiry

4. For all these reasons, it appeared to us that an inquiry into the Scientific Advisory System would be timely. We launched our inquiry in March 1998, with the following terms of reference:

¹ See Evidence HC 769-i, p 2, paragraph 2.6. References to the evidence in the footnotes to this Report are variously: to the oral evidence taken from Sir Robert May on 17 June 1998, HC 769-i of Session 1997-98 (“Q ...”); to the written evidence from OST printed with those Minutes of Evidence (“Evidence HC 769-i, p ...”); to the written evidence published in the Volume of Memoranda published in June 2000 as HC 465 of Session 1999-2000 (“Evidence HC 465, p ...”); and to the memoranda published with this Report (“Evidence, p ...”).

² See Q 1.

³ First Report of the Committee of Standards in Public Life, May 1995.

“Part I - Scientific Advice to Government

to inquire into the means by which the Government uses scientific advice to inform its decision-making and policy development, with particular reference to:

the means by which the Government identifies the need for scientific advice, the sources drawn upon to secure scientific advice including, but not only, the Chief Scientific Adviser to the Government, the Office of Science and Technology, Chief Scientists in Departments, Research Institutes and Advisory Committees,

the ways in which advice delivered is assessed, and the ways in which scientific advice is taken into account in decision-making and policy development; and

to use certain case studies to illuminate its inquiry.

Part II - Quality of and Confidence in Scientific Advice

to inquire into the ways in which the Government establishes the quality of the scientific advice it uses to inform its decision-making and policy-development and whether there are sufficient mechanisms in place to ensure that scientific advice so used carries the confidence of the public.

Part III - The Scientific Advisory System

to inquire into whether or not the Government uses the optimum structure for a scientific advisory system with particular reference to:

the roles and responsibilities of those in the public sector charged with delivering scientific advice to Government,

the impact of structural changes in public sector research establishments, and

the use of external experts; and

to consider what improvements to the scientific advisory system could be made in the light of the experience in this and other countries.”⁴

5. In our inquiry, we have received 53 memoranda from a wide range of organisations and individuals.⁵ We held one session of oral evidence, on 17 June 1998, with Sir Robert May, the Chief Scientific Adviser to the Government.⁶ We visited Washington DC from 22 to 24 June 1998, as part of a visit to that city and to Boston made jointly for this inquiry and our inquiry into Engineering and Physical Sciences Based Innovation. An outline of this visit appears as an Annex to this Report.

6. We then decided to proceed by conducting a number of case studies. First, we examined the scientific advisory system in relation to genetically modified foods, reporting in May 1999.⁷ Secondly, we examined the scientific advisory system in relation to mobile phones and health, reporting in September 1999.⁸ Thirdly, we examined the scientific advisory system in relation to diabetes and driving licences, reporting in February 2000.⁹ In our fourth, and final, case study we examined scientific advice on climate change. (Our Report on the climate change case study is to be published at the same time as this Report.¹⁰) Our purpose in choosing these case studies in particular was:

- (i) to cover a range of Government Departments;
- (ii) to cover topics both of wide public concern and of interest to particular groups; and
- (iii) to examine various different models of advice so that comparisons could be drawn.

⁴ Science and Technology Committee Press Notice No. 13 of Session 1997-98, 12 March 1998.

⁵ The Volume of Memoranda was published as HC 465 of Session 1999-2000.

⁶ Minutes of Evidence, Wednesday 17 June 1998, HC 796-i, Session 1997-98.

⁷ First Report, Session 1998-99, *Scientific Advisory System: Genetically Modified Foods*, HC 286. Government Response: Cm 4527.

⁸ Third Report, Session 1998-99, *Scientific Advisory System: Mobile Phones and Health*, HC 489. Government Response: Cm 4551.

⁹ Third Report, Session 1999-2000, *Scientific Advisory System: Diabetes and Driving Licences*, HC 206. Government Response: Cm 4723.

¹⁰ Third Report, Session 2000-01, *Scientific Advisory System: Scientific Advice on Climate Change*, HC 14.

In this Report we draw together the lessons from the four case studies and the conclusions of our overarching inquiry.

7. We are grateful to all those who contributed to our inquiry by submitting evidence. We are particularly grateful to Sir Robert May both for his evidence and for his continuing interest in our inquiry. We are also most appreciative of the hard work of the two specialist advisers who have assisted us throughout this long inquiry: Professor Derek Burke, formerly Vice-Chancellor of the University of East Anglia; and Professor Michael Elves, formerly Director of the Office of Scientific and Educational Affairs, Glaxo Wellcome plc.

Developments

8. Many significant developments have taken place during the course of our inquiry.

- The OST has published two Reports on the implementation of the OST Guidelines, in July 1998 and November 1999.¹¹ The third annual report is still awaited.
- In July 2000, alongside the Science and Innovation White Paper, the OST published revised Guidelines, “*Guidelines 2000 - Scientific Advice and Policy Making*”. The revised Guidelines extend to social science research, and place greater emphasis on stakeholder involvement and to openness and transparency, particularly in relation to uncertainty.¹²
- In July 2000, the OST also issued a draft *Code of Practice for Scientific Advisory Committees* for consultation. A second draft is to be issued for further consultation in March 2001, and it is planned to publish the final version later in the year.¹³
- The Government has created three new overarching scientific advisory bodies: the Human Genetics Commission (December 1999), the Food Standards Agency (April 2000), and the Agriculture and Environment Biotechnology Commission (June 2000).
- The Government’s White Paper on *Modernising Government* put forward a package of reforms designed to increase the efficiency and responsiveness of Government.¹⁴
- In June 2000, the Chief Scientific Adviser’s *Review of risk procedures used by the Government’s advisory committees dealing with food safety* was circulated to all scientific advisory committees.
- The Freedom of Information Act, which received Royal Assent in November 2000, provides a statutory framework for openness in Government, making disclosure of information the norm save in exceptional circumstances.
- In October 2000, the report of the BSE Inquiry conducted by Lord Phillips of Worth Matravers (“the Phillips Report”) was published.¹⁵ This includes a wide range of lessons to be learned on the use of scientific advisory committees, on the co-ordination of research, and on dealing with uncertainty and the communication of risk. The Government’s Interim Response was published on 9 February 2001.¹⁶
- In March 2000 the House of Lords Science and Technology Committee published a Report on *Science and Society* addressing what it saw as a crisis in public confidence

¹¹ Available on OST’s website: www.dti.gov.uk/ost/aboutost.

¹² The *Guidelines 2000* can be found at www.dti.gov.uk/ost/aboutost/guidelines.htm.

¹³ See Evidence, p 1, paragraph 4. The draft Code of Practice can be found via www.dti.gov.uk/ost/whatsnew.

¹⁴ *Modernising Government*, Cm 4326, March 1999.

¹⁵ HC 887, Session 1999-2000.

¹⁶ *The Interim Response to the Report of the BSE Inquiry*, February 2001, Cm 5049.

in science.¹⁷ This includes a number of recommendations on communicating uncertainty and risk and on the openness of scientific advisory bodies.

9. Scientific advice to Government is under even greater scrutiny now than it was in 1998. Public confidence in the efficacy, and even the integrity, of the scientific advisory system has been sadly eroded. Recent government assurances on the safety of the MMR vaccine, for example, which have been based on the views of the overwhelming majority of scientific and medical opinion, have met with widespread scepticism or downright disbelief. Similarly, anxieties about the use of depleted uranium have been fuelled by suspicions about the scientific information available to Government on its safety. There is now a climate of public opinion which is distrustful of authority. The Government, in its use of the scientific advisory system, has to recognise this social change and respond to meet it.

Developments since our case studies

10. In the area of our case studies, there have also been a number of developments.

GENETICALLY MODIFIED FOODS

11. Since we reported the findings of our case study on GM foods, the regulatory framework has been changed significantly by the creation of the Food Standards Agency. In addition:

- Guidelines have been produced for the trials of GM crops in the UK.
- The OECD held a conference in Edinburgh in February 2000 on the scientific and health aspects of GM foods. The Chairman's summary proposes an international forum on GM technology, modelled on the Intergovernmental Panel on Climate Change.
- The EU Commission has announced that it will propose a Commission Regulation on the labelling of GMO-free foods.
- The Food Standards Agency (FSA) has conducted a study of laboratories' ability to detect the presence of GM material at the single ingredient level, and is to launch a surveillance programme to monitor GM labelling on the high street. The FSA has commissioned a feasibility study for research to monitor the health effects of novel foods.¹⁸

MOBILE PHONES AND HEALTH

12. Since we published the findings of our case study on Mobile Phones and Health:

- The Independent Expert Group on Mobile Phones has published its report ("the Stewart Report"), recommending precautionary action, and, in particular, suggesting that children's use of mobile phones should be limited.¹⁹
- The Government's reply, published on 8 December 2000, announced a comprehensive research programme on mobile phones and health, with funding being provided 50% by government and 50% by industry.

¹⁷ Third Report of the House of Lords Select Committee on Science and Technology, Session 1999-2000, *Science and Society*, HL 38.

¹⁸ See First Special Report, Session 2000-01, *The Work of the Science and Technology Committee 1997-2000*, HC 44, Appendix 1.

¹⁹ *Mobile Phones and Health*, April 2000.

- The European Fifth Framework Programme for 2001 includes research on EMF radiation and cellular phones as a priority area.²⁰

DIABETES AND DRIVING LICENCES

13. Our case study examined the Government's use of scientific advice in determining policy and practice in respect of medical fitness to drive for the condition insulin-treated diabetes mellitus. In response to our recommendations:²¹

- The Honorary Medical Advisory Panel on Driving and Diabetes Mellitus has reconsidered its previous advice and recommended that individual assessment be introduced for category C1 (small lorries) applicants. Individuals with good diabetic control and no significant complications are to be treated as exceptional cases. Changes are to be introduced from early April 2001.
- A programme of research into diabetes and driving has been initiated. The Panel will review its advice on other driving categories when this has been completed.
- Term appointments have been introduced for all members of the Panel.
- A suitable person, nominated by Diabetes UK, is expected to be appointed to the Panel before April 2001.
- Panel meeting agendas and minutes are published on the internet. The Panel is to publish an annual report on the internet "shortly".²²

The Department of the Environment, Transport and the Regions (DETR) has recently sent us, proactively, a progress report, one year after publication of the case study Report. (We publish this with this Report.²³) **We commend to other Departments the DETR's example of providing a one year update on progress on implementing the Committee's recommendations.**

PART I - SCIENTIFIC ADVICE TO GOVERNMENT

Sources of scientific advice

THE COUNCIL FOR SCIENCE AND TECHNOLOGY

14. The Council for Science and Technology is described by OST as "the Government's premier advisory body".²⁴ Its purpose is to advise the Prime Minister on the strategic policies and framework for Science and Technology in the UK. The Council was originally established in 1993, following the *Realising Our Potential* White Paper, to replace the Advisory Committee on Science and Technology (ACOST), but had little impact. It was re-established in March 1998, with new terms of reference and with an enlarged membership, "in order to increase its effectiveness, profile and prominence". The Council is chaired by the Secretary of State for Trade and Industry (though the Minutes suggest that he has only attended one of its meetings since he took office, and that the chair has normally been taken by the Minister for Science). The Chief Scientific Adviser acts as Deputy Chairman, and there are currently 15 independent

²⁰ See First Special Report, Session 2000-01, *The Work of the Science and Technology Committee 1997-2000*, HC 44, Appendix 2.

²¹ See Evidence, pp 7-11. See also First Special Report, Session 2000-01, *The Work of the Science and Technology Committee 1997-2000*, HC 44, Appendix 1.

²² Evidence, p 10, paragraphs 21, 23. See www.dvla.gov.uk/drivers/medical.

²³ See Appendix 2: Evidence, pp 7-11.

²⁴ Evidence HC 796-i, p 6, paragraph 5.3. See also Evidence, pp 4-6, paragraphs 32-44.

members drawn from academia and industry. The full Council meets quarterly with more frequent meetings held by sub-groups. The new Council has to date published one “annual report”, in March 2000, on its work in 1998-99, and three substantive reports:

- a review of Science and Technology matters across Government (July 1999);
- a report on the exploitation of Science and Technology by UK business (February 2000); and
- a report on Science Teachers (also February 2000).

Its website publishes membership, work schedule, and minutes of meetings.²⁵ The Council appears to be active, yet its public profile remains low. The most recent press notice appearing on its website was dated March 2000. It has attracted little attention in even the technical/scientific media. As we discuss in paragraph 44 below, it is also unclear what influence the Council’s reports have had on government policy. **We recommend that the Government give more prominence to the activities of the Council for Science and Technology and respond to its recommendations.**

THE CHIEF SCIENTIFIC ADVISER AND THE OFFICE OF SCIENCE AND TECHNOLOGY

15. The Government’s Chief Scientific Adviser (CSA) is responsible for advising the Prime Minister, the Cabinet and the Secretary of State for Trade and Industry on science and technology matters, and for the quality of scientific advice within Government. As Head of the Office of Science and Technology he is responsible for its transdepartmental functions, advising Ministers and co-ordinating strategy on science and technology matters across Government. In this, the CSA is supported by the OST’s Transdepartmental Science and Technology Group (TDSTG).

16. Sir Robert May, CSA since 1995, was replaced by Professor David King in October 2000. When the CSA post was advertised in the Spring of 2000, we noted that applications were invited only from “scientists”. We wrote to the Secretary of State suggesting that this was unfortunate since the CSA’s remit covers not only science but also engineering and technology. In his response, the Secretary of State assured us that engineers of a first class international reputation would be considered for the post. The successful candidate is, in fact, a surface chemist.

17. The publication of the May Guidelines on *The Use of Scientific Advice in Policy Making* in March 1997 was widely welcomed.²⁶ They were written with clarity and good sense, and responded to a need which had not previously been addressed. The revised *Guidelines 2000*, published with the Science and Innovation White Paper in July 2000, have also been well received.²⁷ In its Interim Response to the Phillips Report, the Government has suggested that “there is scope for preparing more detailed guidance to departments” and proposes that the Chief Scientific Adviser should “adopt the practice of writing to Permanent Secretaries, setting out good practice on arrangements for handling scientific advice and for managing research within their departments”.²⁸ **We commend the proposal that the Chief Scientific Adviser will write regular “good practice” letters to Permanent Secretaries, and that these will be made public. We recommend that the Government also revise and reissue the *Guidelines 2000* in the light of the Phillips Report and our recommendations.**

18. The publication by OST of annual reports on the implementation of the Guidelines in 1998 and in 1999 was, we believe, helpful as a spur to action across Government. We are not clear, however, why the Third Report – anticipated by Sir Robert May in the Second Report –

²⁵ See www.cst.gov.uk.

²⁶ Eg Evidence HC 465, pp 31, 37.

²⁷ Evidence received by the Committee in relation to its inquiry “*Are We Realising Our Potential?*”: to be published.

²⁸ Cm 5049, paragraphs 4.7 and 4.10.

has been delayed. This is regrettable. **The OST should be more active in encouraging consistency of standards in science policy across Whitehall.** As we concluded in our 2000 Report on Government Expenditure on Research and Development: The Forward Look, “the co-ordination role of the OST and the CSA should be enhanced, with a more explicit remit to intervene, where necessary, with departments”.²⁹ **It is important that Ministers in all relevant Departments should support the OST and strengthen it in its role of co-ordinating science policy across Government.**

19. At the same time as it published the *Guidelines 2000*, the OST issued a draft *Code of Practice for Scientific Advisory Committees* for consultation. This exercise closed in December 2000 and according to OST, over 50 responses were received, generally “substantial and of high quality”. The OST is currently redrafting the Code in the light of the consultation and the recommendations contained in the Phillips Report.³⁰ It is intended to circulate the redraft for a second round of consultation in March, and to publish the final version later in the year. **We urge the Government to publish the *Code of Practice for Scientific Advisory Committees* as soon as possible.** This is not a party political matter, and it should not be delayed by the expected General Election.

CHIEF SCIENTISTS IN DEPARTMENTS

20. A number of Departments have their own Chief Scientist or equivalent, whose role within their department is analogous to that of the CSA – primarily to ensure the quality and effectiveness of the research commissioned by their department.³¹ They also have responsibility for ensuring that their Department’s procedures are consistent with OST guidelines. Departmental chief scientists meet together regularly as the Chief Scientific Adviser’s Committee (CSAC), with the CSA in the Chair. (CSAC replaced the Economic Affairs Science and Technology Committee of Officials (EASO) in 1999.)³² CSAC’s remit is to discuss Science, Engineering and Technology (SET) policy and spread good practice; and also to provide advice to Ministers, primarily through the Ministerial Science Group.

21. During our inquiry into the Government’s expenditure on Research and Development in 2000, we were concerned to hear from the Chief Scientist at the Ministry of Agriculture, Fisheries and Food (MAFF) that he did not have direct access to the CSA: contact at that time was via the Department’s Permanent Secretary.³³ As we stated in our Report, “bureaucratic conventions about lines of reporting should not stand in the way of allowing Chief Scientist unfettered access to the CSA on matters of departmental concern”.³⁴ **It is essential that Chief Scientists in Departments should have direct day-to-day access to the Chief Scientific Adviser.**

THE DIRECTOR GENERAL OF RESEARCH COUNCILS AND THE RESEARCH COUNCILS

22. While the Chief Scientific Adviser is Head of the Office of Science and Technology, he is not responsible for advising on the allocation of the OST’s budget. Sir Robert May told us that it was “crucially important that I not be in any way confused with chief scientists within any one department but stand above them all so that I can even-handedly offer advice”.³⁵ We endorse this view. Responsibility for allocation of the science budget falls to the Director

²⁹ Fifth Report, Session 1999-2000, *Government Expenditure on Research and Development: The Forward Look*, HC 196-I, paragraph 134.

³⁰ Evidence, p 1, paragraph 4.

³¹ Evidence HC 796-i, p 8, paragraph 5.13, and pp 13-15.

³² Evidence, pp 6-7, paragraph 52-54.

³³ Minutes of Evidence, Wednesday 2 February 2000, HC 196-i, Session 1999-2000: Qq 114-128.

³⁴ Fifth Report, Session 1999-2000, *Government Expenditure on Research and Development: The Forward Look*, HC 196-I, paragraph 133.

³⁵ Q 32.

General of Research Councils (DGRC) (currently Dr John Taylor³⁶), supported by the OST's Science and Engineering Base Group.³⁷ The DGRC advises the Secretary of State for Trade and Industry on the allocation of the Science Budget to the seven Research Councils³⁸ and sets the broad framework within which the Research Councils decide what science to fund and how. In setting this framework the DGRC must ensure that the Government's existing, and future, needs for scientific research and advice are able to be met.

23. Within the broad framework of the Science Budget, it is, however, for the Research Councils to set their own priorities. They are responsible for supporting basic and strategic research and postgraduate training in their particular area of science. They are also charged with the tasks of providing advice, disseminating knowledge and promoting public understanding of their scientific field. They fund research both in their own research establishments and in the universities. According to the OST, "one of their [the Research Councils'] most important contributions to providing advice is the indirect one of maintaining the health of the Science and Engineering Base so that it can respond to unexpected needs".³⁹ But they also provide advice directly, through membership of advisory committees, through their Chief Executives' meetings with the DGRC, and in response to specific requests for Government. Research Council research establishments have a major part in scientific advice to Government, as we discuss below.

PUBLIC SECTOR RESEARCH ESTABLISHMENTS

24. The Public Sector Research Establishments (PSREs) are, in OST's words, "a key element in the Government science and technology advisory system".⁴⁰ There are over 50 of these establishments, sponsored either by the Research Councils or directly by Government Departments.⁴¹ During the course of our case studies, we have looked at the work of several of these establishments, including the Meteorological Office (an executive agency of the Ministry of Defence (MoD), which also receives funding from DETR), the Centre for Ecology and Hydrology (a NERC establishment), the National Radiological Protection Board (Department of Health) and the Roslin Institute (BBSRC). We have recently visited the Defence Evaluation Research Agency (an executive agency of MoD) at Porton Down.

25. Since 1994, there have been a number of structural changes in the PSREs. A few have been privatised (for example, the Building Research Establishment and the Laboratory of the Government Chemist). The majority have remained in the public sector but have been encouraged to work on a more business-like basis. We consider in paragraph 78 below how this is affecting the scientific advisory system.

GOVERNMENT ADVISORY COMMITTEES

26. The Government also receives scientific advice from a wide variety of departmental advisory bodies. These are committees or groups of outside experts (and, in some cases, civil servants) of many different kinds, and of widely varying purpose. The OST's memoranda distinguish three categories of advisory bodies:

³⁶ Dr Taylor gave evidence to us on the role of the DGRC on 8 December 1999: see Minutes of Evidence, HC 81-i, Session 1999-2000.

³⁷ Evidence HC 796-i, p 7, paragraph 5.9.

³⁸ The Biotechnology and Biological Sciences Research Council (BBSRC), the Engineering and Physical Sciences Research Council (EPSRC), the Economic and Social Research Council (ESRC), the Medical Research Council (MRC), the Natural Environment Research Council (NERC), the Particle Physics and Astronomy Research Council (PPARC) and the Council for the Central Laboratory of the Research Councils (CCLRC)). The Royal Society and the Royal Academy of Engineering are also funded in part from the Science Budget.

³⁹ Evidence HC 796-i, p 7, paragraph 5.11.

⁴⁰ Evidence HC 796-i, p 8, paragraph 5.14.

⁴¹ For a list of PSREs, see Evidence HC 465, p 127, Annex 1.

- those which advise Government on the current state of play in specific areas of science;
- those which advise Government on policy more generally but where science and scientific advances are still a paramount consideration or driver; and
- those whose work is primarily to science and technology support programmes or its funding.⁴²

27. Our inquiry has focussed on the first category. The OST memorandum lists over 50 of these scientific advisory committees.⁴³ The largest number, 23⁴⁴, are sponsored by DETR, which helpfully divides its advisory committees into those advising on science at a basic level (the Climate Change Impacts Review Group and the Hadley Centre Science Review Group, for example, which featured in our Climate Change case study); those building on advice, to provide a risk analysis (the Marine Pollution Management Group and the Biocides Usage Group, for example); and those building on advice and risk analysis, to make policy recommendations (the Royal Commission on Environmental Pollution, for example, and the Honorary Medical Advisory Panels on Medical Conditions and Driving, of which the Diabetes Sub-Committee was the focus of our case study on Diabetes and Driving Licenses). The Department of Health sponsors 12, including the Committee on Medical Aspects of Radiation in the Environment (COMARE) and the Committee on Medical Aspects of Food and Nutrition Policy (COMA). MAFF has 10 advisory committees. Among these, the Advisory Committee on Novel Foods and Processes featured in our GM Foods case study, and the Spongiform Encephalopathy Advisory Committee (SEAC) was closely studied in the Phillips Report. The Health and Safety Commission and Executive have 11; MoD has three; and the Department of Trade and Industry (DTI) two. These advisory committees do not conform to any one model. They are committees of experts, but some include civil servants as well as outside advisors.⁴⁵ Most are chaired by an independent specialist.

28. In our case studies, we have also looked at the work of a few of those committees which are described as advising Government on policy more generally.⁴⁶ These include the Advisory Committee on Releases to the Environment (DETR), the Inter-Agency Committee on Global Environmental Change (OST) and the National Radiological Protection Board (Department of Health)⁴⁷.

29. We are aware that the list of advisory committees supplied by OST in May 1999⁴⁸ – and therefore these statistics – are already out of date. **We recommend that Government publish an annual list of scientific advisory committees, with details of membership (including registered interests) and terms of reference, perhaps in the annual report on the implementation of the Guidelines.**

STRATEGIC ADVISORY BODIES

30. Since we began our inquiry, the Government has created three new “strategic” scientific advisory bodies:

- the Human Genetics Commission (HGC),
- the Food Standards Agency (FSA), and
- the Agriculture and Environment Biotechnology Commission (AEBC).

⁴² Evidence HC 796-i, p 8, paragraph 5.17.

⁴³ Evidence HC 465, pp 128-137.

⁴⁴ A number of these are jointly sponsored with another department.

⁴⁵ For example, the UK Climate Change Impacts Programme Steering Committee, Evidence HC 465, p 131.

⁴⁶ See Evidence HC 465, pp 138-140.

⁴⁷ This is classed both as an advisory body and as a PSRE.

⁴⁸ See Evidence HC 465, pp 128-141.

Although often grouped together, each of the three bodies has a different status.⁴⁹ The HGC and AEBC are advisory commissions established by the Department of Health and the Cabinet Office (and the three devolved administrations) respectively. The FSA, on the other hand, is a non-Ministerial Government Department, established by Act of Parliament: it has a statutory basis and a range of executive functions, as well as an advisory role. When our predecessor Committee recommended the establishment of a Human Genetics Commission in its 1995 Report on Human Genetics, it recommended that it be given, similarly, a statutory basis.⁵⁰ We regret that the Government did not accept this recommendation. **The status accorded different advisory bodies at present appears haphazard. Careful consideration should be given to the formal status of new advisory bodies before they are established.**

31. The three new bodies are not just committees of scientists: they include in their membership journalists and representatives of consumer, green and other interest groups. They are therefore much more political, in the widest sense, than traditional advisory committees. Their role goes beyond assessment of the science: they are to look at the “big picture”, taking ethical and social issues into account, as well as the science.⁵¹ All three bodies have made a good start. They have made a point of engaging with the public: the HGC, for example, has recently held a public information-gathering and discussion day on genetics and insurance. They have adopted high standards of openness and transparency: their easily accessible websites contains the minutes of their meetings, registers of interests and workplans.⁵²

32. The Science and Innovation White Paper states –

“These Commissions face a challenging task, bringing together widely difficult views on very difficult issues and working under public view. If they are successful, they will provide models for the future. The Government will watch their work closely to see what lessons can be translated into other areas.”⁵³

We welcome the new strategic advisory bodies and, like the Government, will be watching their work with interest. However, **it is essential that Ministers do not hide behind these bodies on issues of policy, for it is Ministers who are responsible for policy decisions.**

INTERNATIONAL ADVICE

33. As evidence from the DETR states, “a development over recent years has been the “globalisation” of the science assessment and risk assessment process”, reflecting the increasing degree to which Government policy is developed in international fora.⁵⁴ Where policy is being made on an international basis – either by supranational bodies, such as the European Union, or by intergovernmental negotiation – international advisory mechanisms may be necessary. We welcome the Government’s assurance that it is working to ensure that the principles underlying good scientific decision making are adopted by international bodies.⁵⁵ We support the recommendation of the House of Lords Science and Technology Committee that **the Government should press for guidelines on scientific advice across the board, along the lines of the OST guidelines, to be adopted at European Commission level.**⁵⁶

34. During our case study on Scientific Advice on Climate Change we looked at the way in which the Intergovernmental Panel on Climate Change (IPCC) operates.⁵⁷ The IPCC involves many hundreds of climate scientists from around the world, covering a wide range of disciplines and a variety of opinions. Its reports are very lengthy and detailed documents, which are subject

⁴⁹ See Evidence, pp 1-4, paragraphs 5-31.

⁵⁰ Third Report, Session 1994-95, *Human Genetics: the science and its consequences*, HC 41-I, paragraph 287.

⁵¹ Evidence, p 4, paragraph 26.

⁵² See www.foodstandards.gov.uk; www.hgc.gov.uk; and www.aebc.gov.uk.

⁵³ Cm 4814, chapter 4, paragraph 29.

⁵⁴ Evidence HC 796-i, p 33.

⁵⁵ Cm 5049, paragraph 4.14.

⁵⁶ HL Paper 38, paragraph 4.9.

⁵⁷ HC 14, paragraphs 6-9.

to extended peer review, and to very widespread scrutiny before publication by scientists and by Governments. The IPCC is generally held in very high regard, and it has been suggested that it be used as a model for scientific advice on other issues of complexity and global concern, such as, for example, GM technology and ocean pollution. At the OECD Edinburgh conference on the scientific and health aspects of genetically modified foods in February 2000, it was proposed that there should be an international forum to provide Governments with authoritative assessments of the latest GM technology. This would be along the lines of the IPCC, but it would include both scientists and stakeholders. **We reiterate the recommendation made in our climate change case study Report, that the Government actively promote the IPCC model of scientific advice in other policy areas of global significance in which there is scientific uncertainty.**

35. Even where policy is being decided within the UK, it may well be useful to obtain advice from abroad. We are fortunate that the UK science base is broad, but there is often much to be gained from a wider perspective; and international involvement may increase public confidence in the advice provided. Scientific research is increasingly conducted by international collaboration. We welcome the statement in the Guidelines that, when Departments are establishing advisory committees, “consideration should be given where appropriate to inviting experts from outside the UK, for example those from European or international advisory mechanisms, particularly in cases where other countries have experience on, or are likely to be affected by, the issue under consideration”.⁵⁸ **The Government should make full use of scientific experience abroad, and include experts from abroad on advisory committees, where appropriate. This has rarely been the case in the past.**

THE LEARNED BODIES

36. The OST’s memorandum states that “the Government works closely with a range of other organisations as appropriate”, including the Learned Bodies (the Royal Society, the Royal Academy of Engineering, the Professional Institutions etc) and independent bodies of experts (for example, the Standing Committee on Structural Safety).⁵⁹ The Learned Bodies, however, think that the Government fails to pay them sufficient attention. The Royal Society of Chemistry argued that the scientific, learned and professional societies were “undervalued and underused as sources of scientific advice”, and pointed out that the May Guidelines made virtually no mention of them. It suggested that “it can be a matter merely of historical accident as to who is consulted and who is not in a given area”, and that the Government wrongly perceived the scientific societies to be interested only in academic, and not in industrial issues.⁶⁰ The Royal Society recommended that “the Government should make much more use of independent, external sources of advice”, and pointed out that advice from “independent bodies of international reputation ... brings with it the endorsement of internationally recognised peers”.⁶¹

37. In our view, the Learned Bodies are an invaluable source of authoritative scientific advice, and it is surprising that Government Departments appear not to consult them as a matter of routine. They are particularly well-placed to advise on the selection of scientists to serve on advisory committees, and to advise which disciplines it would be appropriate to include. And given that some Learned Bodies are partly public funded, it is only right that they should be expected to contribute advice to Government. We note that the *Guidelines 2000* indicate that Departments might draw on learned societies, among others, in identifying appropriate experts and that, in its Interim Response to the Phillips Report, the Government states that it will consider placing this on a more formal basis.⁶² **We recommend that the OST ensure that Departments consult the Learned Bodies whenever establishing a new advisory body.**

⁵⁸ *Guidelines 2000*, paragraph 13.

⁵⁹ HC 796-i, Evidence, p 8, paragraph 5.18.

⁶⁰ HC 465, Evidence, pp 101-102.

⁶¹ HC 465, Evidence, pp 65-66, paragraph 8.

⁶² Cm 5049, p 71, finding 108.

38. Several of the Learned Bodies and professional institutions complained to us that, when they are consulted by Government, on draft policy documents for example, the time allowed for consultation is inadequate.⁶³ This can give the impression that the consultation is little more than cosmetic. The Institute of Biology suggested that there should be a minimum of two months allowed from receipt of consultation papers to the deadline for delivery of advice.⁶⁴ The Royal Society of Chemistry called for a Consultation Concordat between the Government and the scientific community with a Code of Practice setting out the responsibilities of each to ensure that the consultation system works efficiently and effectively.⁶⁵ **The Government must allow a reasonable time for outside bodies to respond to consultation. Furthermore, to demonstrate that the consultation has been genuine, we recommend that the Government adopt the practice of publishing a summary of the results of consultation.**

39. The Learned Bodies and professional institutions regularly act proactively to produce reports on subjects they regard as important and of interest to policymakers. Government must take proper account of these reports – and be seen to be taking account of them. We note that the Home Affairs Committee has recently elicited and published a full response from the Home Office to the Report of the Independent Inquiry into the Misuse of Drugs Act 1971 (the Runciman Report).⁶⁶ We should be pleased to act similarly, if circumstances require it. **Government should be aware that we will consider using our powers to insist on a memorandum from the Government responding in full to the recommendations made in reports by the Learned Bodies.**

40. **The Government could also commission reports from the Learned Bodies, where appropriate.** In our climate change Report, we recommend that the Government establish a new independent advisory committee to advise Government on climate change.⁶⁷ To underline its independence, and to build on the work that the Royal Society is already doing in this field, we suggested that the new committee might be jointly established by Government and by the Royal Society, perhaps along the US National Academy of Science / National Research Council model. (In the USA, the Government buys in advice on a contractual basis from the National Research Council, an independent body established by the National Academy of Science.) This model might also be appropriate in other areas. **Involving the Learned Bodies more closely in the scientific advisory system would be a straightforward way of demonstrating its independence.**

The Government's role

IDENTIFYING THE NEED FOR ADVICE

41. It is clear that there is a wide range of sources of scientific advice available to Government. It appears to us that advisory committees respond well, for the most part, when asked for information or to respond to questions, but the system is not proactive; indeed, in some cases this is precluded by their terms of reference. **If advisory committees are not asked the right questions, important scientific information may never be brought to the Government's attention.** As the Phillips Report has stated, "the progress of research and the implications of any new developments must be kept under continuous and open review".⁶⁸ **All advisory committees should be allowed to operate more proactively, monitoring developments in scientific research in their field and alerting the Government to relevant change.**

⁶³ Eg Evidence HC 465, pp 34, 40, 100.

⁶⁴ Evidence HC 465, p 41.

⁶⁵ Evidence HC 465, p 101.

⁶⁶ Second Special Report from the Home Affairs Committee, Session 2000-01, HC 226. See also Third Special Report from the Home Affairs Committee, Session 2000-01, *Work of the Committee in the 1997 Parliament*, HC 248, paragraph 6.

⁶⁷ HC 14, paragraph 20.

⁶⁸ HC 887-I, paragraph 1289.

42. A key issue for Government is to ensure that there is a sound research base on which advice can be based. In all our case studies we have found that there are serious gaps in research.⁶⁹ We have also found that where issues cross departmental boundaries – as they do on GM foods, mobile phones and climate change, for example – there is frequently inadequate co-ordination of the research being commissioned by the different Departments, and insufficient cross-fertilisation of ideas. We welcome the Government's commitment to joined-up work and policy development, and its proposal "to use increased openness to help identify areas of potential weakness in the research map".⁷⁰ **It is vital that research is adequately co-ordinated, and that any gaps in research needed to inform policy are identified and addressed, with funding made available. The research programme must do more than meet policymakers' current needs for information: it must try to anticipate the advice required in future years.**

43. Of course, anticipating the needs of policymakers years ahead is far from easy. Departments must ensure that they have enough well-qualified science and engineering personnel in-house who are in touch with their professional communities. Departments should also encourage the Research Councils and the Learned Bodies to provide them with foresight of potential scientific developments. **And it should be made clear in the terms of reference of advisory bodies that it is their role to look ahead and advise Departments of issues which may face policymakers in years ahead.**

ASSESSING ADVICE

44. It also falls to Government to assess the advice it receives. One of the lessons identified in the Phillips Report is that "Departments should retain "in house" sufficient expertise to ensure that the advice of advisory committees, and the reasoning behind it, can be understood and evaluated".⁷¹ In its Interim Response, the Government states that the OST is "conducting scoping and exploratory work to identify present and future needs for scientific staff and, in particular, the expertise needed to handle effectively advice from scientific advisory committees".⁷² Consultation is expected on this in the Summer. In our GM foods Report, we noted evidence from the Institution of Professionals, Managers and Specialists (IPMS) that scientific expertise in the civil service was being degraded, and that the separation of the central civil service from the PSREs and scientific agencies had reduced the natural flow of scientists from active science to scientific policy making.⁷³ The Council for Science and Technology highlighted the need to ensure that Departments had sufficient high quality people with knowledge and experience of science and engineering in their 1999 Review of S&T Activity across Government. Yet this significant issue was not given prominence in the latest Science White Paper. During our visit to the USA, we noted that there were a large number of experienced scientists in high levels of Government there. **The Government must take steps to ensure that there is sufficient scientific expertise within the civil service, so that Departments may be "intelligent customers" and have the capacity to interpret and understand the advice they receive.**

45. The Phillips Report recommends that advice should normally be in writing, in terms that can be understood by a layperson, should state the reasons for conclusions and any underlying assumptions, and where appropriate should set out the different policy options and the implications of each.⁷⁴ This has always been the practice of many advisory committees – the Advisory Committee on Novel Foods and Processes, for example – and is now incorporated in the Guidelines. In our Climate Change Report, we commend the "Summaries for Policymakers" provided in the IPCC's assessment reports; though we noted that focusing attention on summaries which presented the consensus view might limit the IPCC's effectiveness in communicating the extent of the uncertainties of climate change science.⁷⁵ **It is incumbent on**

⁶⁹ See eg Climate change HC 14, paragraph 25.

⁷⁰ Cm 5049, paragraphs 4.24 and 7.7ff.

⁷¹ HC 887-I, paragraph 1290.

⁷² Cm 5049, paragraph 4.13.

⁷³ HC 286-I, paragraph 78.

⁷⁴ HC 887-I, paragraph 1290.

⁷⁵ HC 14, paragraph 8.

advisory bodies to present their advice in a way which is clear and comprehensible, while identifying any uncertainty and dissent as well as their consensus view.

USING ADVICE IN POLICY-MAKING

46. The purpose of the scientific advisory system is to inform the Government of scientific matters relevant to policy decisions. How Government uses advice in policy-making is therefore a test of the effectiveness of the scientific advisory system.

Scientific uncertainty and the precautionary principle

47. A central issue for Government is how it handles scientific uncertainty and risk. This has been a recurring theme in our inquiry, and is one of the central issues of the Phillips Report. The House of Lords Science and Technology Committee, in its Report on Science and Society, addressed the problem of communicating uncertainty and risk, and concluded that there were no easy answers.⁷⁶ In our climate change Report, we commend the formula for expressing degrees of uncertainty which is adopted in the IPCC's summaries for policymakers, and suggest that this could usefully be adopted by other advisory bodies.⁷⁷ **We believe that the public is well able to understand uncertainties, if they are clearly presented.**

48. When faced with scientific uncertainty, the Government may be required to apply the precautionary principle. In the Government's words, the precautionary principle "holds that absence of scientific proof should not delay or prevent proportionate measures to remove or reduce threats of serious harm".⁷⁸ The precautionary principle, or approach, is frequently applied by policymakers. We have seen it applied in our case studies. It is applied in the Government's response to climate change, in the labelling requirements for GM foods, and in preventing people with diabetes from driving. In each case there was some evidence, not yet overwhelming, of a problem which might lead to serious circumstances. Sadly, the precautionary principle was not applied by Government in relation to policy on BSE. As the Phillips Report finds, "the importance of precautionary measures should not be played down on the grounds that the risk is unproved". **We welcome the Government's commitment to applying the precautionary principle where appropriate.**⁷⁹ We recognise, however, that **whether to apply the precautionary principle in a particular case is essentially a political decision, and rightly the responsibility of elected Ministers.** While scientists can offer useful advice about the magnitude of the risks involved, public opinion plays a major part in persuading Government to apply – or not to apply – the precautionary principle.

49. Firmly linked to the precautionary principle, however, is a principle of proportionality. The Government should take that action which is proportionate to the risk. In its Interim Response to the Phillips Report, the Government states that its approach is "to make available to the public sufficient information about a risk, in a form that is easily understood, so that individuals can make their own choices"; but that where "the risks are taken involuntarily, affect vulnerable groups, such as children, or where the hazard is widespread the public expects government to ensure that measures are in place to protect them". The Government acknowledges that "a balance needs to be struck between intervening too much ... and failing to help protect them sufficiently from actual or potential hazards".⁸⁰ In our Diabetes Report, for example, we concluded that the outright ban on insulin-treated diabetics from driving heavier road vehicles was an unjustifiably severe application of the precautionary principle.⁸¹ **The Government must ensure that its response is proportionate to the potential threat. The Minister for Science, through the Chief Scientific Adviser, should ensure that the precautionary principle is properly understood, and applied where appropriate, across Government.**

⁷⁶ HL Paper 38, Chapter 4, and Summary, paragraph 10.

⁷⁷ HC 14, paragraph 27.

⁷⁸ Cm 5049, paragraph 6.14.

⁷⁹ Cm 5049, p 76.

⁸⁰ Cm 5049, paragraphs 6.5-6.6.

⁸¹ HC 206-I, paragraphs 13-24.

Intragovernmental co-ordination

50. In a number of areas we have found that communication of advice between Government Departments, and even within Departments, is inadequate. We have noted, for example, the importance of effective co-ordination between the several Whitehall departments involved in responding to climate change, and also between central and local government. The Phillips Report has emphasised this point, calling for advice to be “circulated to all within government with responsibility for policy decisions in respect of which the advice is relevant”.⁸² In response, the Government has acknowledged that, while papers are routinely circulated around Departments, there may be a need for supplementary guidance on the internal handling of scientific advice within Departments.⁸³ **The Government must ensure that scientific advice is disseminated effectively amongst policymakers.**

PART II—QUALITY OF AND CONFIDENCE IN SCIENTIFIC ADVICE**Establishing the quality of advice**

51. The Government has to establish that the advice it receives is of a high quality. It has to ensure that its sources of advice are good and operate effectively, and it has to have ways of checking that the advice it receives is valid. (We explore in paragraphs 61 to 76 below a number of ways in which the operation of advisory committees can be improved.)

52. The most effective way of ensuring the validity of advice is to open the advice to peer review. Peer review may be formal – by asking other experts to review the advice – or informal, for example by opening the advice to public scrutiny. It is important to ensure that formal peer review is independent and rigorous. There is a risk that reviewers may be too close to those they are reviewing to be critical or to offer a significantly different perspective. This may be regarded by a hostile public as incestuous. It is, therefore, important that formal peer review be supplemented by wider scrutiny. Many advisory committees are already in the practice of publishing their advice to Government, and the commitment to transparency for all advisory committees will facilitate scrutiny greatly. But for this wider scrutiny to be effective **the Government must offer clear channels for scientists of other disciplines to offer their alternative perspective.**

53. A key question in our inquiry has been whether the Government is sufficiently aware of those independent scientists whose views diverge from the profession’s mainstream: dissident or even maverick voices. We questioned, for example, whether the Government was taking account of the views of a minority of scientists who doubt that climate change is, to a significant extent, man-made. **We repeat the recommendation made in our report on Climate Change, that clear and transparent channels should be available through which scientists who hold dissenting views can readily communicate their ideas to policymakers and can have confidence that they have been heard. It should be the clear responsibility of advisory committees to draw dissenting views to the attention of Government.**

54. One of the difficulties for Government is to establish whether an approach is coming from a sensible, if dissident, scientist, or simply from someone who is peddling an unsubstantiated view. We have seen examples where scientists have been manipulated by the media, who have given quite disproportionate and uncritical coverage to their research. Scientists who are unused to media attention may be seduced to voice views way beyond their scientific knowledge.

⁸² HC 887-I, paragraph 1290.

⁸³ Cm 5049, p 74, finding 129.

Government must ensure that dissident scientists are heard, but not give credence to those who, with media encouragement, are voicing unsubstantiated theories.

Public confidence

55. There is no doubt that there has been a loss of public confidence in the scientific advisory system. This is only partly a reflection on the scientific advisory system itself: it is part of a wider public distrust of the political process and possibly a decline in respect for authority. As we stated in paragraph 9, the Government, in its use of the scientific advisory system, must recognise this social change and respond to it. Public opinion plays a major part in forming Government policy, whatever the scientific advice. New developments need to have public support. It was public opinion, not scientific advice, which led to policy changes on GM foods, for example. **Restoring public confidence in scientific advice is essential, but it will be a hard, and slow, process.**

Openness and transparency

56. The Phillips Report sets out three simple lessons:

- “– To establish credibility it is necessary to generate trust
- Trust can only be generated by openness
- Openness requires recognition of uncertainty, where it exists”.⁸⁴

These lessons are strongly endorsed in the Government’s Interim Response. This states that the Government is committed to a policy of open and transparent working, and recognises that efforts to “build and sustain trust through openness cannot succeed unless it is fully prepared to acknowledge uncertainty in its assessments of risk”.⁸⁵ The *Guidelines 2000* emphasise that Department’s procedures for obtaining advice should be open and transparent; and the draft Code of Practice expects advisory bodies to maintain high levels of transparency during routine business and to publish appropriate documents explaining their activities. **We commend the very significant steps which Government is making to increase openness and transparency.**

57. The Government’s commitment to transparency is very welcome. We note that there are limitations to this commitment. The Government was not prepared to extend the provisions of the Freedom of Information Act to factual information made available to Ministers. The draft Code of Practice envisages that in some circumstances the advice of advisory bodies will not be published. **Voluntary disclosure is not enough, if the public is to be convinced that the scientific advisory system is truly transparent.** Furthermore, publication is increasingly taken to mean publication on the internet. Many – perhaps most – advisory committees now have their own websites, but some are very hard to locate. We find that it takes time to find even major policy documents such as the *Guidelines 2000* and the draft Code of Practice: we suggest that consultation documents, in particular, should be clearly accessible. We note with approval the proposal in the Government’s Interim Report that there should be a centrally run website providing access to information about publicly-funded R&D programmes.⁸⁶ In addition to, or perhaps part of, this, **we recommend that there should be a website for the scientific advisory system, with direct links to every advisory committee.** However, there is a need for caution. While we welcome the provision of government information on the internet, it should not be an alternative to publication on paper. **Many people do not have access to a computer and for them information published on the internet will not be readily accessible.**

⁸⁴ HC 887-I, paragraph 1301.

⁸⁵ Cm 5049, paragraph 5.3.

⁸⁶ Cm 5049, paragraph 4.26.

The role of the media

58. Efforts to sustain public confidence in the scientific advisory system are not assisted by the inaccurate or sensational reporting of scientific matters in the media. In our case study on GM foods, we were very concerned by the quality of media coverage of GM issues. We recommended that there be a Code of Practice governing media coverage of scientific matters, and that breaches be referred to the Press Complaints Commission.⁸⁷ In its response, the Government maintained that the newspaper industry's existing Code of Practice covered alleged inaccuracy in reporting, regardless of the subject matter, and that the BBC's guidelines and the ITC's Programme Code required accuracy of reporting in the broadcasting media. The Government saw no merit in a separate code for scientific matters.⁸⁸ We note that the Royal Society has produced guidelines for editors, calling for factual accuracy and balance in media coverage of science. **We endorse the recommendation of the House of Lords Select Committee that the Press Complaints Commission should adopt and promulgate the Royal Society's guidelines for editors.**⁸⁹

59. The role of the media has been explored in depth by the House of Lords Committee in its Report on Science and Society. We commend this Report to the scientists and journalists. While we continue to believe that inaccurate and unbalanced reporting is unacceptable, we note the Lords Committee's conclusion that scientists must learn to work with the media as they are. **Scientists must learn to communicate better and to present their case to the media.**

PART III—THE SCIENTIFIC ADVISORY SYSTEM

Operation of the advisory committees

60. As the Science and Innovation White Paper states -

“Expert scientific advisory committees are absolutely essential to our society. Without the knowledge and wisdom of the people who give up their time to serve on them, we would not be able to identify or manage the risks from science, or gain the benefits of scientific advances. We all owe them a debt of gratitude.”⁹⁰

The advisory committees do an enormous amount of valuable work, for little or no reward. We firmly believe that the advice which they give to Government is for the most part of a very high quality. Significant improvements have been made in recent years in the way they operate. Implementation of the new Code of Practice will improve matters further. It is clear from our inquiry that there are a number of areas where changes are still required.

TERMS OF REFERENCE

61. It is essential that all scientific advisory bodies should have clear terms of reference. As the Phillips Report states, “the areas of advice that are required from the advisory committee should be identified as precisely as possible before the committee is set up” and “consideration should be given at the outset to the manner in which the committee will contribute to deciding policy”.⁹¹ It must be clear whether committees are simply to advise on the science, or whether they are also to advise on the policy options. It must also be clear where the limits of their responsibility, in the latter context, lies.

⁸⁷ HC 286-I, paragraph 29.

⁸⁸ Cm 4527, paragraphs 9-11.

⁸⁹ HL Paper 38, paragraph 7.31.

⁹⁰ Cm 4814, chapter 4, paragraph 26.

⁹¹ HC 887-I, paragraph 1290.

62. We are concerned that the distinction between risk assessment (properly the role of advisory committees) and risk management (principally the responsibility of Departments) seems frequently to be blurred. We note that the new strategic advisory bodies have responsibility for both: they advise and they recommend policy, although ultimate decision-making remains with Ministers. Some of the advisory committees too are asked to advise on policy options. As Phillips notes, “if a committee is asked to advise which policy option to adopt, there may be little alternative but to follow that advice”.⁹² **Whatever the role of the advisory body, it must be clear that responsibility for decision-making lies with the Department, and that accountability for these decisions lies with Ministers. Advisory bodies must not be used as a device by Ministers to shirk difficult policy decisions.**

63. We welcome the commitment by the Government to improve both risk assessment and risk management procedures. The Government has established an Inter-departmental Liaison Group on Risk Assessment (ILGRA).⁹³ The Treasury has recently published a broad framework for managing risk (“the Orange Book”⁹⁴), which sets out the principles of good risk management. The Government recognises that guidance alone will not be enough, and that officials will need to be thoroughly trained in its application. Advisory committees will also need clear guidance. The Phillips Report found that “where a committee is asked to advise on risk management, it will normally be helpful to follow a formal structure based on recognised principles of risk assessment”.⁹⁵ The Government has agreed that this should be made clear in the Code of Practice.⁹⁶

RECRUITMENT

64. Since 1998, appointments to advisory committees have been subject to the Public Appointments Code. This is very welcome. Vacancies are advertised, but it will still be necessary for Departments to “headhunt”, or encourage suitable people to apply. As Phillips has stated, advisory committees should include experts in the areas of the advice that is likely to be required. This may seem self-evident but it has not always been the case. It is not always clear, particularly to the non-specialist, exactly which disciplines will be relevant, and this may change over time. For example, we were surprised that there was no expert on road traffic statistics on the Honorary Medical Advisory Panels on Medical Conditions and Driving.⁹⁷ We are concerned to discover that, while the Government agreed to appoint one, this has not happened since the Panel has “reservations about the usefulness of such an expert”.⁹⁸ This is a matter for Ministers to decide and not one on which the Panel should hold sway. In our climate change case study, we found that biologists and geologists were insufficiently included in the advice to Government on climate change. The Royal Society of Chemistry felt that “governments have an incomplete view as to whom it is appropriate to consult on a given issue, which may be based on an insufficient appreciation of the interdisciplinary nature of modern science”.⁹⁹ **The Guidelines must stress the importance of including all relevant disciplines on advisory committees, and the Learned Bodies could give invaluable advice here.**

65. Not surprisingly in view of the negative publicity surrounding the scientific advisory system, it is becoming increasingly difficult to attract suitable people to join advisory committees. Service on a committee is seen as a “high grief / no gain” position. It is proving particularly difficult to find suitable people to chair committees. For example, we understand that it took many months to find suitable people to chair the AEBC and ACRE, and SEAC is still without someone permanent in the chair. Service on a committee may be costly in time, though this varies from committee to committee: being in the chair of a busy committee can be a major

⁹² HC 887-I, paragraph 1290.

⁹³ Evidence, p 7, paragraph 55.

⁹⁴ *Management of Risk - A strategic overview*, January 2001.

⁹⁵ HC 887-I, paragraph 1290.

⁹⁶ Cm 5049, page 73.

⁹⁷ HC 206-I, paragraph 28.

⁹⁸ First Special Report, Appendix I, paragraph 51. See too Evidence, p 9, paragraphs 13-14.

⁹⁹ Evidence HC 465, p 100.

commitment. The Phillips Report recommended that those who are invited to join a committee should be given a realistic estimate of the commitment required of them.¹⁰⁰

66. Remuneration for service on advisory committees is low or non-existent. (It is normal for committee members to have their expenses met, but only in some cases is remuneration paid.) The Phillips Report found that “where the workload of a committee is considerable, it is reasonable that members who are not public servants should be remunerated”.¹⁰¹ The Government has accepted this finding in principle and is to consider how it can best be achieved.¹⁰² We believe that there should at least be consistency across Government departments, taking account of the varying workloads of committees, and that rates of pay should be public information. It is unfair that the FSA, as an independent Department, is able to pay higher rates to its Board members than is the HGC or the AEBC. **We recommend that the Government ensure that there is consistency and openness in the remuneration of members of scientific advisory bodies.**

67. More important than remuneration is the need to ensure that people are given credit for their service on advisory committees, or, at the very least, that they are not penalised. Academic scientists are discouraged from joining advisory committees by the fact that their university is not compensated for their absence. Indeed, under the Research Assessment Exercise, their university will actually lose out. Some Vice-Chancellors may actively prevent their members from joining government committees because of the adverse effect on their funding. **We recommend that the Research Assessment Exercise and the Teaching Quality Assessment should take account of service on government advisory committees. It is vital that the advisory system should be able to involve scientists during their active working life, and not be dependent on those who are retired.**

LAY MEMBERS

68. There have been lay members on some advisory committees for many years. Our case studies have convinced us of their value. As the Phillips Report states, “a lay member can play a vital role on an expert committee, and in particular can ensure that advice given by the committee addresses the concerns of, and is in a form that is intelligible to, the public”.¹⁰³ The Government has stated that it agrees with this finding.¹⁰⁴

69. There is some uncertainty about the definition of the term “lay member”. It does not necessarily mean a non-scientist; indeed, some scientific background may be very useful. In our GM report we took the view that the term should refer also to experts from other scientific disciplines.¹⁰⁵ On occasions it may be valid to include non-scientists on advisory committees, for example in our Diabetes report we recommended that an insulin-treated diabetic should be invited to take part in meetings of the Honorary Advisory Panel and have full access to papers, but not to be a formal member of the Panel.¹⁰⁶ However, we felt it inappropriate to include “consumer representatives” on those committees whose job was to consider the science, rather than consumer interests. **It should be clear that the role of the lay member is to bring an alternative perspective to the committee and not to represent an interest group.** The *Guidelines 2000* state rather vaguely that, in obtaining advice, Departments might draw on “lay members of advisory groups, consumer groups and other stakeholder bodies”. **The Guidelines should clarify that “lay members” can include scientists of other disciplines.**

70. In our Diabetes case study Report, we proposed that two lay members should be appointed to all the Honorary Medical Advisory Panels.¹⁰⁷ We similarly recommended that there be at least

¹⁰⁰ HC 887-I, paragraph 1290.

¹⁰¹ HC 887-I, paragraph 1290.

¹⁰² Cm 5049, p 72, finding 111.

¹⁰³ HC 887-XI, paragraph 4.773. Also HC 887-I, paragraph 1290.

¹⁰⁴ Cm 5049, p 75, finding 138.

¹⁰⁵ HC 286-I, paragraph 54.

¹⁰⁶ HC 206-I, paragraph 30.

¹⁰⁷ HC 206-I, paragraph 29.

two lay members of the Expert Group on Mobile Phones.¹⁰⁸ In our GM report, we recommended that experts from other disciplines should make up a fifth of the membership on all scientific advisory committees.¹⁰⁹ There is a danger that a single lay member on a committee of experts may feel isolated, and inhibited from questioning the expert view. **We recommend that the norm be for at least two lay members (depending on the size of the committee) to be appointed to scientific advisory committees. The Guidelines should make this explicit.**

POTENTIAL CONFLICTS OF INTEREST

71. Our case studies have also convinced us of the importance of involving scientists working for industry in advising Government, even when they may have a financial interest in the matter in which their advice is sought. In our GM report, we rejected the suggestion that employees of biotechnology or food companies should be barred from serving on GM advisory committees, and stated that “It is vital that appointments to scientific advisory committees should continue to be made by selecting people with the most suitable and relevant expertise”.¹¹⁰ We rejected any suggestion that scientists’ integrity was automatically compromised by association with industry. We pointed out that if all scientists with research connections to the biotechnology industry were barred, whether as company employees or as academics collaborating with companies, the Government would be deprived of some of the best scientific expertise available. Similarly, in our Mobile Phones Report, we recommended that industrial representatives, with useful, relevant expertise, should be included in the Expert Group on Mobile Phones, though we felt that they should not be in a majority.¹¹¹

72. While an interest should not be a bar to membership, there should be clear guidelines for disclosure. The Phillips Report supports this view: “Potential conflicts of interest should not preclude selection of those members otherwise best qualified, but conflicts of interest should be declared and registered.”¹¹² The *Guidelines 2000* state merely that “the relevant declarations of interests should, as a minimum, be made available to anyone who is proposing to act in reliance upon the advice”. This does not seem to us to go far enough. Many advisory committees, and all three of the new strategic advisory bodies, do publish registers of their members’ interests on the internet. **We recommend that the revised Guidelines require all advisory committees to publish registers of members’ interests.**

73. It is not only those employed by industry who may have commercial interests: academic and public sector scientists may well have links to commercial organisations, or even be dependent on them for funding. **The revised Guidelines should make clear that the requirement to declare interests extends to those in all sectors.**

TURNOVER OF MEMBERSHIP

74. It is important to ensure reasonable turnover of membership of advisory committees. In our Diabetes case study, we learned that appointments were open-ended: two of the seven members of the Honorary Advisory Panel on Driving and Diabetes Mellitus had been on the Panel for 15 years, and another for 11 years.¹¹³ **We welcome the Government’s commitment to a policy of appointments being limited to five years, and being renewable only once.**¹¹⁴ However, in most cases, appointments are made for three years only, renewable once. In our GM report we expressed concern that ten of the 13 members of the Advisory Committee on Releases to the Environment were nearing the end of their term of office and would be ineligible for reappointment.¹¹⁵ This had come about because there had been no policy of replacement on

¹⁰⁸ HC 489-I, paragraph 33.

¹⁰⁹ HC 286-I, paragraph 53.

¹¹⁰ HC 286-I, paragraph 48.

¹¹¹ HC 489-I, paragraph 32.

¹¹² HC 887-I, paragraph 1290.

¹¹³ HC 206-I, paragraph 31.

¹¹⁴ Evidence, p 10, paragraph 20.

¹¹⁵ HC 286-I, paragraph 46.

this committee. The Government agreed that where possible Departments should stagger the dates or duration of appointments.¹¹⁶ **The revised Guidelines should make clear that Departments should ensure that advisory committees do not experience large changes of membership at one time.**

COMMITTEE SECRETARIATS

75. It is important for the effectiveness of advisory committees that they be properly staffed. In most cases, advisory committees are staffed by a small secretariat of civil servants drawn from the sponsoring Department(s), and located within the Department. While this may give rise to questions as to their independence, it allows good communication between the Department and the committee. The Phillips Report found that “it will often be desirable to draw the secretariat from the commissioning Department(s) in order to provide a two-way channel of communication”. It noted, however, that “the secretariat must be careful to respect the independence of the committee”.¹¹⁷ We welcome the Government’s undertaking that these concerns will specifically be taken into account when the next draft of the Code of Practice is issued.¹¹⁸ While we accept that close links with the Department concerned can be useful, we suggest that it would be beneficial for at least some of a committee’s staff to be brought in from outside (for example, on secondment from the Research Councils or the Learned Bodies). **It is essential that the staff of an advisory committee appreciate that they work for the committee and not for the Department.**

76. In our GM inquiry, we were concerned by the evidence of the Chairman of ACRE that insufficient resources and staff were allocated to the support of his committee, and that this was causing “serious problems”. We recommended that the Government looked closely at the staffing arrangements for scientific advisory committees and committed itself to providing large enough secretariats to ensure their efficient working.¹¹⁹ In its response, the Government acknowledged that there had been heavy demands on ACRE’s staff time, and that the DETR had responded by taking on extra staff.¹²⁰ The Government does not appear to have reviewed the staffing arrangements more generally, as we recommended. In our current inquiry into Genetics and Insurance, we have been told by a member of the former Human Genetics Advisory Commission that its staff resources were “barely adequate” and that on occasion this caused difficulty for members.¹²¹ We believe this to be a widespread and continuing problem. **We recommend that the Government ask each advisory committee to report on the adequacy of its resources, and to make a case for an increase, if they think this necessary. Advisory committees must have the resources they require to operate effectively.**

Rationalisation of committees

77. It is clear from the OST’s list of advisory committees, that a lot of committees have grown up over the years, and that they are not in any rational pattern. We believe that the usefulness of a committee should be reviewed, by an external body, at least every five years. If there is no longer a clear need for a committee, it should be disbanded. In addition, we believe there is a need for a review of the whole network of advisory committees to establish whether there is any overlap or duplication which suggests the need for rationalisation. **We recommend that the Government carry out a review of the advisory committee network and thereafter establish a system of five-yearly reviews for individual committees.**

¹¹⁶ Cm 4527, paragraph 26.

¹¹⁷ HC 887-I, paragraph 1290.

¹¹⁸ Cm 5049, p 72, findings 112-113.

¹¹⁹ HC 286-I, paragraph 77.

¹²⁰ Cm 4527, paragraph 54.

¹²¹ Professor Martin Bobrow, Minutes of Evidence, 24 January 2001, HC 174-i, Evidence, p 12.

Impact of change in Public Sector Research Establishments

78. As we discussed in paragraph 25 above, the PSREs have been subject to increased competition for funding. The relationship between establishment and Government Department is therefore changing to one of contractor and customer. Potentially this may have considerable implications for the way in which the Government gets scientific advice: Departments will require sufficient scientific expertise in-house in order to be able to act as “intelligent customer”. In 1997, our predecessor Committee received evidence suggesting that basic research was suffering as a result of pressure on PSREs, and the Research Councils, to move closer to the market; and voiced concern, in particular, about the Met Office’s continuing ability to run a high quality research programme.¹²² It has to be said that, in this inquiry, we have encountered little evidence of significant problems so far. **It is too soon to say how the research base, or the scientific advisory system, has been affected by the moves to encourage commercialisation in the Public Sector Research Establishments.**

79. In our case study Report on Scientific Advice on Climate Change, we note the Government’s reliance for advice on the Hadley Centre of the Meteorological Office.¹²³ We note the advantages which stem from the very close relationship between Hadley Centre scientists and DETR officials, and suggest that this closeness in part accounted for the early acceptance by the UK Government of the need to tackle climate change. But we voice concern that the Government is perhaps over-reliant on the Hadley Centre, to the exclusion of other sources of advice and other disciplines. It is in our view unsatisfactory for the Government to be dependent for advice on just one source of advice, particularly if that source of advice is not perceived to be independent of Government. **The Government must avoid dependence on single sources of advice.**

Lessons from abroad

80. During our visit to Washington DC in June 1998, we studied how the scientific advisory system operates in the USA and how it compares to our own. We learned a number of lessons. For example -

- The Office of Science and Technology Policy (OSTP) is an influential and highly respected body, and a model for our OST to aspire to.
- There was a wide division between those responsible for advice (OSTP) and those responsible for science funding (the Departments).
- Government bought advice on a contractual basis from the independent National Research Council, established by the National Academy of Science. This seemed to work well, demonstrating that the customer/contractual relationship can work.
- There were a higher number of experienced scientists in high levels of Government than in the UK.
- Access to information was more deeply entrenched in the US system and this ensured that advice was subject to media and public scrutiny and to informal peer review.

¹²² Third Report of the Science and Technology Committee, Session 1996-97, *The Natural Environment Research Council and Research into Climate Change*, HC 81-I.

¹²³ HC 14, paragraphs 10-15.

CONCLUSION

81. It is clear from the Phillips Report, and from our own case studies, that all is not well with the scientific advisory system. Many improvements have been made, but much remains to be done. Much of the scientific advice delivered to Government is excellent - and we pay tribute to those who provide it - but faults, in the way that the advisory committees are set up, staffed and operate, mean that it is not always as good as it needs to be. The Government does not always seek advice when it needs it, nor ask the right questions. It is not always effective in assessing the advice when it gets it, and does not always apply that advice in policy-making. The distinction between the role of scientific advisory bodies and Government Departments in policy-making is not always clear-cut. These are systemic problems which must be addressed. We welcome the Government's constructive response to the BSE inquiry and acknowledge the very real progress which has been made, particularly in openness and transparency. But there is still some institutional complacency, and a misplaced belief that the problem lies with public perception rather than with the structure and use of the scientific advisory system itself. Reform of the scientific advisory system is required if public confidence is to be restored.

Annex: Outline of the Committee's visit to Washington DC, 22nd - 24th June 1998**SCIENTIFIC ADVICE TO GOVERNMENT IN THE USA****22nd June 1998****Evening briefing with British Embassy staff**

Mr Christopher Whaley, Counsellor (Science & Technology, Energy Environment)

Ms Philippa Rogers, First Secretary (Science & Technology)

23rd June 1998**Meetings at the British Embassy**

Professor Chris Hill, Vice President for Research and Professor of Public Policy, George Mason University

Dr Albert Teich, Director of Science and Policy Programs, American Association for the Advancement of Science

John Covver, Former Director of Medical Technology Assessment, Health Insurance Association of America

Topics discussed: The scientific advisory system within the US Congressional System and at the White House; the science budget and congressional scrutiny of the science budget; R&D funding; the role of the American Association for the Advancement of Science and the former Office of Technology Assessment; health insurance and experimental treatments.

Meeting at the National Academy of Sciences

Dr Bruce Alberts, President, National Academy of Sciences

Dr Bill Colglazier, Executive Officer, National Academy of Sciences

Dr Sherburne Abbot, Executive Director, Board of Sustainable Development

Dr Robert Cook-Deegan, Director, National Cancer Policy Board

Dr Kevin Cowley, Director, Board on Radioactive Waste Management

Topics discussed: The role of the National Academy of Science and its parallel organisations (the National Research Council, the National Academy of Engineering and the Institute of Medicine) in advice to Government; Global Change and the role of the Board on Sustainable Development; the role of the National Cancer Policy Board; the impact of NAS/NRC reports; the role of the Board on Radioactive Waste Management; developments in genetics.

24th June 1998**Breakfast meeting**

Dr Mike Tilsen Department of Energy

Mr Colin Norman Science Magazine

Dr Robert Frisk Congressional Research Service

Topics discussed: Science funding, US energy policy; US public attitudes to climate change; the role of the Congressional Research Service; the effectiveness of the National Academy of Science; US media coverage of scientific issues.

Meetings at the House of Representatives

Representative Dr Vernon Ehlers, Vice Chairman of the Committee on Science, House of Representatives

Representative George Brown, Ranking minority member (Democrat), House Science Committee

Representative F James Sensenbrenner, Chairman of the House Science Committee

Topics discussed: The role and work of the House Science Committee; scientific advice within Congress; US science policy and the science budget; the abolition of the Office of Technology Assessment; the role of the Office of Science and Technology Policy; global warming and the Kyoto Protocol.

Meeting with the Office of Science and Technology Policy (OSTP)

Dr Neal Lane, Director of the OSTP and Chief Scientific Advisor to the President

Dr Arthur Bienenstock, Associate Director for Science

Ms Rachel Levinson, Assistant Director, Life Sciences

Topics discussed: The role of the OSTP and the Chief Scientific Advisor to the President; their relationship with the President's Committee of Advisors of Science and Technology (PCAST) and the National Science and Technology Council (NCTC).

[An outline of the Committee's visit to Boston, 25th - 26th June 1998 was published as Annex 3 to the Committee's Report on Engineering and Physical Sciences Based Innovation, Second Report of Session 1999-2000, HC 195-I.]

LIST OF ABBREVIATIONS USED IN THE REPORT

ACOST	Advisory Committee on Science and Technology
ACRE	Advisory Committee on Releases to the Environment
AEBC	Agriculture and Environment Biotechnology Commission
BBC	British Broadcasting Corporation
BBSRC	Biotechnology and Biological Sciences Research Council
BSE	Bovine Spongiform Encephalopathy
CCLRC	Council for the Central Laboratory of the Research Councils
COMA	Committee on Medical Aspects of Food Nutrition Policy
COMARE	Committee on Medical Aspects of Radiation in the Environment
CSA	Chief Scientific Adviser
CSAC	Chief Scientific Adviser's Committee
CST	Council for Science and Technology
DETR	Department of the Environment, Transport and the Regions
DGRC	Director General of Research Councils
DTI	Department of Trade and Industry
EASO	Economic Affairs Science and Technology Committee of Officials
EMF	Electromagnetic Field
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
EU	European Union
FSA	Food Standards Agency
GM(O)	Genetically Modified (Organism)
HGC	Human Genetics Commission
ILGRA	Interdepartmental Liaison Group on Risk Assessment
IPCC	Intergovernmental Panel on Climate Change
IPMS	Institution of Professionals, Managers and Specilaists
ITC	Independent Television Commission
MAFF	Ministry of Agriculture, Fisheries and Food

MMR	Measles, Mumps, Rubella
MoD	Ministry of Defence
MSG	Ministerial Science Group
NERC	Natural Environment Research Council
OECD	Organisation for Economic Co-operation and Development
OST	Office of Science and Technology
OSTP	Office of Science and Technology Policy
PPARC	Particle Physics and Astronomy Research Council
PSRE	Public Sector Research Establishment
R&D	Research and Development
S&T	Science and Technology
SEAC	Spongiform Encephalopathy Advisory Committee
SET	Science, Engineering and Technology
TDSTG	Transdepartmental Science and Technology Group

PROCEEDINGS OF THE COMMITTEE RELATING TO THE REPORT

MONDAY 12 MARCH 2001

Members present:

Dr Michael Clark, in the Chair

Dr Ian Gibson
Dr Brian Iddon

Mr Robert Jackson
Dr Lynne Jones

The Committee deliberated.

Draft Report (The Scientific Advisory System), proposed by the Chairman, brought up and read the first time.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 81 read and agreed to.

Ordered, That an outline of the Committee's visit to Washington DC in June 1998 be annexed to the Report.—(*The Chairman.*)

Resolved, That the Report be the Fourth Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select Committees (reports)) be applied to the Report.

Several papers were ordered to be appended to the Report.

Ordered, That the Appendices to the Report be reported to the House.—(*The Chairman.*)

Several papers were ordered to be reported to the House.

[Adjourned till Wednesday 14 March at a quarter to Four o'clock.]

LIST OF MINUTES OF EVIDENCE AND MEMORANDA

Minutes of Evidence taken in this inquiry were published in Session 1998–99 as HC 796-i

Wednesday 17 June 1998

Sir Robert May

These Minutes of Evidence include a memorandum from:

The Office of Science and Technology

A volume of Memoranda received in this inquiry was published in Session 1999–2000 as HC 465

This volume includes memoranda from:

1. Emeritus Professor J F Lamb
2. Mr Neville Craddock
3. The Engineering Council
4. Health and Safety Executive
5. Royal Society for the Protection of Birds
6. UK Life Sciences Committee
7. Society for General Microbiology
8. Bioscience Network
9. British Medical Association
10. Medical Research Council
11. Institution of Civil Engineers
12. Mr Philip W Strachan
13. British Ecological Society
14. Council of Science and Technology Institutes
15. The Royal Academy of Engineering
16. The Weinberg Group
17. Institute of Physics

18. Institute of Biology
19. Institution of Professionals, Managers and Specialists
20. Natural Environment Research Council
21. British American Tobacco
22. The Royal Society
23. Trades Union Congress
24. Engineering and Physical Sciences Research Council
25. The Royal Society of Edinburgh
26. British Association for the Advancement of Science
27. Economic and Social Research Council
28. Greenpeace UK
29. Professor Ian G Halliday
30. Particle Physics and Astronomy Research Council
31. Leatherhead International Ltd, BIBRA International, Camden & Chorleywood Food Research Association and Brewing Research International
32. The Geological Society
33. The Earl Baldwin of Bewdley
34. Forensic Science Service
35. Food and Drink Federation
36. Save British Science Society
37. Health and Safety Executive Interdepartmental Liaison Group on Risk Assessment Risk Communication Sub-group
38. London Centre for Governance, Innovation and Science
39. The Royal Society of Chemistry
40. Professor Ian Begg, South Bank University, Professor James Gorbett, University of Essex, and Ms Sarah Plant, South Bank University
41. Consumers' Association
42. Sir John Knill
43. Office of Science and Technology
44. Microshield Industries PLC
45. British Diabetic Association
46. National Physical Laboratory

47. Dr Claudia B and Mr Arthur J Hayward-Costa
48. Dr P J Watkins, Honorary Medical Advisory Panel on Diabetes and Driving
49. Rt Hon Michael Meacher MP, Minister for the Environment

UNPRINTED MEMORANDA

Additional Memoranda have been received from the following and have been reported to the House, but to save printing costs they have not been printed and copies have been placed in the House of Commons Library where they may be inspected by Members. Other copies are in the Record Office, House of Lords, and are available to the public for inspection. Requests for inspection should be addressed to the Record Office, House of Lords, London, SW1. (Tel 020 7219 3074). Hours of inspection are from 9.30 am to 5.30 pm on Mondays to Fridays.

1. Appendix to Memorandum submitted by the Royal Society for the Protection of Birds
2. Appendix to Memorandum submitted by the Bioscience Network
3. Annexes to Memorandum submitted by The Royal Society of Chemistry
4. Appendices to Memorandum submitted by the Weinberg Group
5. Appendix to Memorandum submitted by the South Bank University
6. Appendix to Memorandum submitted by Lord Baldwin of Bewdley
7. Annexes and Appendix to Memorandum submitted by British American Tobacco
8. Appendix to Memorandum submitted by Sir John Knill
9. Annexes to Memorandum submitted by the National Physics Laboratory
10. Appendix to Memorandum submitted by Dr Claudia B Costa and Mr Arthur J Hayward-Costa

LIST OF REPORTS

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Second Report: The Year 2000—Computer Compliance (HC 342)

Third Report: Glaxo Wellcome and SmithKline Beecham: The Merger Proposals (HC 627)

Fourth Report: The Cloning of Animals from Adult Cells (HC 1039)

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Fifth Report: Government Expenditure on Research and Development: The Forward Look (HC 196-I)

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APPENDICES

APPENDIX 1

Further supplementary memorandum submitted by the Office of Science and Technology

1. The memorandum responds to the request of 17 January 2001 from the Committee Clerk for an update on progress with a number of issues, namely:

- progress with the production of the Code of Practice for Scientific Advisory Committees;
- the role, status and purpose of the new Food Standards Agency; the Human Genetics Commission and the Agricultural and Environment Biotechnology Commission;
- the work to date of the reformed Council for Science and Technology (CST);
- the practices which these four bodies have developed to ensure openness and transparency; and
- any developments in the mechanisms for sharing scientific advice and information between government departments.

2. This memorandum takes as its starting point the position as set out in the Government's two previous memoranda of May 1998 and May 1999¹, and describes what has happened since.

I. PROGRESS ON PRODUCTION OF CODE OF PRACTICE FOR SCIENTIFIC ADVISORY COMMITTEE.

3. On 26 July 2000, an initial public consultation on the Code of Practice for Scientific Advisory Committees was launched alongside the Science and Innovation White Paper "Excellence and Opportunity". That consultation document invited members of the public to consider what provisions might usefully be included in the new Code. It suggested some possible provisions and invited comments on them, as well as offering consultees the chance to make their own suggestions on what other matters should be covered. The issues covered in the initial consultation document included:

- transparency: what information a committee should publish, handling of confidential information, reporting of uncertainty in advice to departments; communication to stakeholders, including the approach to public consultation and dialogue;
- responsibilities of the Chair, including training needs;
- responsibilities and duties of the members, including understanding of the committee's and of their own personal role, the balance of representation, changes of membership and conflicts of interest;
- duties of the secretariat and other government officials involved with the committee;
- committee working practices, the use of research, early identification of issues, risk assessment, procedures for arriving at conclusions, exchange of information with other committees.

4. The initial consultation closed on 1 December 2000. Over 50 responses were received. The responses were in general substantial and of a high quality, and raised many useful points, which the Government is currently studying. The Government will also want to take into account the "lessons learned" which have emerged from the Report of Lord Phillips' inquiry into BSE, many of which are relevant to the operation of scientific advisory committees and their relationships with government and the public. The lessons from the Inquiry will be an important element in the further development of the Code. The Government is drawing up a fresh draft, which would take into account all these elements, and intends to circulate it in March for a second round of consultation, with a view to drawing up and promulgating the final version later this year.

II. THE ROLE, STATUS AND PURPOSE OF THE THREE NEW OVERARCHING STRATEGIC BODIES:

(a) *The Food Standards Agency*

5. The Food Standards Agency (FSA) was created by an Act of Parliament and came into being on 1 April 2000. Its primary purpose is to "protect public health from risks which may arise in connection with the consumption of food, and otherwise protect the interests of consumers in relation to food" (Food Standards Act 1999, s.1(2)).

6. The Agency was set up by the Government following a long series of events over many years which eroded the public's confidence in the arrangements for ensuring the safety of food. Highly publicised issues such as salmonella in eggs, listeria in paté and soft cheeses, e. coli and, above all, BSE led many people to believe that a new body was needed to oversee food safety and standards.

7. Although called an Agency, the FSA is a department of government. Unlike most, it is non-ministerial and operates at arm's length from ministers, but its role, powers and responsibilities are similar to that of

¹ See HC 796-i, Session 1998–99 and HC 465, Session 1999–2000.

other departments. However, it has a Chairman, Deputy Chair and Board of independent members who were appointed to act in the public interest, not to represent particular sectors. The members bring a wide range of relevant skills and experience.

8. The Agency is a UK body, accountable to Parliament in Westminster through the Secretary of State for Health and the devolved administrations through their Health Ministers or equivalents. Its headquarters are in London and it has offices in Aberdeen, Belfast and Cardiff. The Meat Hygiene Service—which also has the protection of public health as a primary aim—is also part of the Agency.

9. On its creation, the Agency took over a large number of functions and regulatory responsibilities from the Health and Agriculture Departments across the UK. It also acquired some important new functions. Under the Food Standards Act 1999, its main functions are:

- Developing policies (or assisting in the development by any public authority of policies) relating to matters connected with food safety or other interests of consumers in relation to food; providing advice, information or assistance in respect of such matters to any public authority;
- Providing advice and information to the general public (or any section of the public) in respect of matters connected with food safety or other interests of consumers in relation to food; and providing advice, information or assistance in respect of such matters to any person who is not a public authority;
- Obtaining, compiling and keeping under review information about matters connected with food safety and other interests of consumers in relation to food.

10. This latter function includes (among other things):

- monitoring developments in science, technology and other fields of knowledge relating to the matters mentioned above; and
- carrying out, commissioning or co-ordinating research on those matters.

11. New powers and functions vested in the Agency include:

- Animal feeding stuffs;
- Observations with a view to acquiring information;
- Monitoring of enforcement actions.

12. As the department with primary responsibility for food safety, the Agency takes advice from a number of advisory committees. The role of most (though not all) of these committees is to provide independent scientific assessments of risk. The Agency is responsible for formulating policy and advising ministers on the basis of this advice and other evidence. It is required to take into account both the costs and benefits of its decisions.

13. The Agency has three core values. It will:

- put the consumer first;
- be open and accessible; and
- be an independent voice.

14. At its launch, the Agency committed itself to:

- base its decisions and advice on the best evidence available;
- consult widely before making recommendations unless urgent action is essential;
- obtain independent expert advice from advisory committees;
- commission research to support its functions; and
- be prompt in making public its advice to government.

15. The Agency is honouring these commitments. It has published details of how it puts its core values into practice and lives up to these commitments in a range of documents, such as its Statement of General Objectives and Practices, its code of Practice on Openness, its Statement on the Agency's Approach to Risk and its internal Guidance on Consultation. All these documents and a wide range of other information can be found on its web-site at www.foodstandards.gov.uk.

(b) *The Human Genetics Commission.*

Remit

16. The Human Genetics Commission (HGC), chaired by Baroness Helena Kennedy QC, is the UK Government's advisory body on how new developments in human genetics will impact on people and on healthcare. Its remit is to give ministers strategic advice on the "big picture" of human genetics, with a particular focus on social and ethical issues. Its terms of reference are:

- To analyse current and potential developments in human genetics and advise ministers on their likely impact on human health and healthcare, and their social, ethical, legal and economic implications.
- To advise on strategic priorities in the delivery of genetic services by the NHS.
- To advise on strategic priorities for research.
- To develop and implement a strategy to involve and consult the public and other stakeholders and encourage debate on the development and use of human genetic technologies and advise on ways of increasing public knowledge and understanding.
- To co-ordinate and exchange information with relevant bodies in order to:
 - identify and advise on the effectiveness of existing guidance and of the regulatory and advisory framework as a whole, taking account of European and global dimensions; and
 - look at the lessons learnt from individual cases requiring regulatory decision to build up a wider picture.
- To consider specific issues related to human genetics and related technologies as requested by ministers.
- To operate in accordance with best practice for public bodies with regard to openness, transparency, accessibility, timeliness and exchange of information. In considering national issues, HGC will adopt a UK perspective which will include taking account of legal and other differences between England, Scotland, Wales and Northern Ireland, and of the status of devolved and non-devolved matters.

Status

17. HGC was established following a comprehensive review in May 1999 by the UK Government of the regulatory and advisory framework for biotechnology. As a result, three advisory human genetics committees were wound up and their responsibilities passed to HGC, which has taken forward various aspects of their work. These were: the Human Genetics Advisory Commission (see Annex 2B of first Supplementary Memorandum), the Advisory Committee on Genetic Testing (see Annex 2A of first Supplementary Memorandum) and the Advisory Group on Scientific Advances in Genetics.

Openness and transparency

18. HGC has a strong remit to involve and consult the public and others, to encourage debate, to advise on ways of increasing public knowledge and understanding and to follow best practice in terms of openness and transparency.

19. The HGC website is used to publish agendas in advance of meetings and the minutes of meetings shortly afterwards. A range of background material and papers are either published on the website or are available on request. HGC is considering how audio and video content might be added to the website in future. All future plenary HGC meetings will be open for the public to attend as observers. Sub-group meetings are not open for the public to attend, but attributable minutes are published.

20. As part of their Code of Practice members are asked to act in accordance with government policy on openness, comply fully with the Code of Practice on Access to Government Information, and adopt the best practice principles on transparency, timeliness and exchange of information.

21. HGC publishes and maintains a Register of Members' Interests. At the beginning of each meeting members are reminded of the need to keep this up to date, of the need to declare any personal or business interests relevant to specific agenda items and that they should not then take part in discussing such items.

Recent Developments

22. The members of HGC were appointed in December 1999 and the Commission first met on 10 February 2000. At its second meeting on 18 May 2000 membership and terms of reference were agreed for three sub-groups on Horizon-Scanning, Genetic Testing, and Public Involvement in Genetics; and for a Working Group on the Storage, Protection and Use of Genetic Information. HGC is also committed to establishing a "Patient Panel" to help bring the knowledge and experience of those broadly affected by genetic disorders to the work of the Commission. Over the past year two consultative meetings have been held: on HGC's workplan on 10 April in London and on the main theme of HGC's current workplan, human genetic information, on 27 November in Newcastle. A public information-gathering and discussion day on genetic testing and insurance will take place on 9 February 2001 in London. HGC has commissioned a MORI "People's Panel" survey on the public's attitude to genetics and the use of genetic information. Interim results were published last November and a report with the full results will be published very shortly.

23. At present HGC is conducting a consultation on the storage, protection and use of personal genetic information. HGC will consider the outcome of these various activities, along with the reports of the House

of Lords Select Committee Inquiry into Human Genetic Databases and the House of Commons Select Committee Inquiry into Genetics and Insurance, and will report to ministers with its advice by late 2001.

24. In November 1999 the Human Fertilisation and Embryology Authority, in collaboration with the Advisory Committee on Genetic Testing, launched a consultation on Pre-implantation Genetic Diagnosis (PGD). A Joint Working Party with members from both the HGC Genetic Testing Sub-group and the HFEA are currently considering the results of the consultation and later this year will make recommendations concerning the HFEA's licensing of PGD and the nature of the guidance as to when PGD should be offered and the associated ethical issues.

25. Further details of HGC are to be found at the Commission's website at www.hgc.gov.uk.

(c) The Agriculture and Environmental Biotechnology Commission.

Remit

26. The Agriculture and Environment Biotechnology Commission (AEBC) like the HGC, was established following a comprehensive review of the regulatory and advisory framework for biotechnology. It provides the UK Government and the devolved administrations with independent, strategic advice on developments in biotechnology and their implications for agriculture and the environment. Like HGC it will look at the "big picture" taking ethical and social issues into account as well as the science.

Openness and Transparency

27. The AEBC is committed to maximum openness and transparency. Agendas, minutes of AEBC meetings (including sub-groups), and background papers are publicly available and posted on the Commission's web-site, www.aebc.gov.uk. Those who do not have access to the internet may obtain information via the secretariat.

28. The Commission consulted widely on its draft Work Plan. In addition to a written consultation exercise, in December last year it held a public meeting in London to hear views before finalising the Plan, which was presented to Ministers on 10 January. Future formal meetings will be held at different venues around the United Kingdom and will include public sessions.

Recent Developments

29. The AEBC's Work Plan identifies three priority issues on which it has already started work:

- examining the Government's decision making process on biotechnology using case studies of the farm-scale evaluations and issues surrounding gene flow;
- animals and biotechnology; and
- horizon scanning for new developments.

30. The first of these formed the focus for the Commission's next public meeting in Norwich on 5 and 6 February where there was an evidence-taking session for the case study on the farm-scale evaluations.

31. The AEBC is also carrying out preliminary work on future enquiries into consumer choice and public attitudes, bioremediation and liability for environmental damage. Further information on these studies and on the Commission's proposed methods of working can be found in its Work Plan on www.aebc.gov.uk.

III. THE COUNCIL FOR SCIENCE AND TECHNOLOGY (CST).

Remit

32. As set out paragraph 5.3 of the Government's May 1998 memorandum, the Council serves as the Prime Minister's top level advisory body, providing its independent views and recommendations about strategic issues concerning Science and Technology (S&T) in the UK. It is supported by a secretariat in the Office of Science & Technology.

33. The Council is specifically charged with taking a medium to longer term, proactive approach to its core task of keeping under review, and making recommendations on, ways of improving:

- the performance of the UK (public and private) in S&T, in relation to current and future national needs and opportunities;
- the overall impact of the funding arrangements for publicly supported S&T including those for research in higher education institutions;
- the effective use and exploitation of S&T by business, government and the public services to create wealth and improve our quality of life; and
- the synergy between the UK's domestic and international S&T activities and the scope for the UK to get more benefit from S&T collaboration.

34. The Council also provides its independent advice on more specific strategic issues of national importance whenever this is sought.

Membership

35. Members are appointed by the Prime Minister, normally for a period of three years, on the advice of the Cabinet Minister with transdepartmental responsibilities for S&T, the Rt Hon Mr Stephen Byers MP, the Secretary of State for Trade & Industry. Appointments are made in accordance with the requirements of the Office of the Commissioner for Public Appointments.

36. Members serve on the Council without remuneration. Any incidental costs they incur on Council business, such as travel, can be reimbursed by the Government.

Work

37. Each year, the Council meets quarterly and undertakes a programme of work on a limited number of topics that are determined by its independent members on the basis of the following general criteria:

- Strategic importance: is the issue sufficiently important to justify the Council's attention?
- Timeliness: is this the most appropriate time to consider this issue? How and when does it fit within the schedule of Government business?
- Relevance: is the issue of relevance to Government policy making?
- Value Added: what value can the Council add? Is it the most appropriate body to address this issue?
- Coverage: is the issue relevant to the whole of the UK?

38. At the Council's quarterly meetings, members have also provided their views and advice on particular S&T issues, as and when sought by the Government.

39. During 1998–99, the Council prepared and subsequently published three substantive reports with advice to the Prime Minister:

- "A Review of S&T activity across Government" (September 1999);
- "Technology Matters"—a report of the exploitation of S&T by UK Business (March 2000); and
- "Science Teachers"—a report on supporting and developing the profession of science teaching in primary and secondary schools (March 2000).

40. During 2000–01, four sub-groups of Council members are working, respectively, on the following topics:

- The Arts & Humanities in relation to Science and Technology;
- A Quinquennial Review of the six Grant Funding Research Councils;
- Follow up to CST's report on Science Teachers;
- Preparation of the CST's advice on Departments' new Science and Innovation strategies.

Openness and Transparency

41. Under the Council's terms of reference, any sub-groups may involve additional non-Council members with appropriate expertise who are co-opted to help deal with the particular topic concerned. Additionally, the work of these sub-groups can involve written or other forms of consultations with third parties for the purposes of obtaining the views and evidence on which to establish the Council's advice. The Council is specifically required to publish an annual report, information about its work programme, and normally its advice.

42. As an "advisory, non departmental public body", the Council operates in accordance with the framework for "Opening Up Quangos" which the Government established in 1998. It has adopted a code of practice based on the seven principles of public life, the "Nolan" standards of selflessness, integrity, objectivity, accountability, openness, honesty, and leadership.

43. The Council presently comprises 15 independent members: Mr Javaid Aziz; Mr Euan Baird; Professor S Kumar Bhattacharyya CBE FENG; Professor Sir Alec Broers FRS FENG; Professor Vicki Bruce; Professor Sir Christopher Evans OBE; Professor Julia Higgins CBE FRS; Dr Rob Margetts CBE FENG; Sir Paul Nurse; Dr David Potter CBE; Miss Emma Rothschild; Professor Peter Schuddeboom; Sir Richard Sykes DSc FRS; Professor David VandeLinde; and Mr John Weston.

44. The Council has established a website (at www.cst.gov.uk), containing information about its:

- Terms of Reference;
- Membership and Organisation, including members' CVs and Register of Interests;
- Work, including an overview and summaries of individual work items;

- Reports, including background papers and government responses to-date;
- Meetings, both its forward schedule and summaries of all its meetings so far;
- Press Notices; and
- A “What’s New?” page to help enquirers keep track of its work and progress.

IV. NEW MECHANISMS FOR SHARING ADVICE AND INFORMATION BETWEEN GOVERNMENT DEPARTMENTS.

45. The Government’s two previous memoranda described the ways and means by which government departments use and share advice and information for decision making and policy development. They explained the role and work of the Ministerial Science Group (MSG) and the Ministerial Group on Biotechnology and Genetic Modification (MISC6), the Chief Scientific Adviser (CSA), the Director General of the Research Councils (DGRC), the Cabinet Official Committee on Science & Technology (EASO) and the Interdepartmental Group on Risk Assessment (ILGRA).

46. The Minister for Science and the CSA, supported by OST, continue to be the focal points for the co-ordination of S&T issues across government and with the devolved administrations in Scotland, Wales and Northern Ireland.

47. The Ministerial Science Group (MSG) is chaired by the Minister for Science and Innovation, Lord Sainsbury of Turville, and comprises ministers from each of the departments with significant SET activity, including the devolved administrations. It aims to promote a co-ordinated and coherent approach to SET policy-making.

48. Where issues cross departmental boundaries, responsibility for high-level co-ordination of the policy on particular issues may rest with the appropriate ministerial committee. This may be one of the standing cabinet committees such as HS or EA or a specially convened committee such as MISC6 whose role is to consider issues relating to biotechnology, in particular those arising from genetic modification.

49. The previous memoranda also covered the “Forward Look” publication, the CSA’s Guidelines on the use of Scientific Advice in Policy Making (“the Guidelines”), the CSA’s first annual report on the implementation of the Guidelines, and post devolution arrangements.

50. More recent developments are as set out below.

Guidelines on Scientific Advice in Policy Making

51. In November 1999 the CSA published a second report on the implementation by departments of the Guidelines.

The Government’s White Paper “Excellence and Opportunity” published in July 2000 sets out the Government’s commitment to an independent and transparent advisory framework for science. Its launch was accompanied by:

- Publication of Guidelines 2000 on Scientific Advice and Policy Making—an update of the 1997 Guidelines.
- Publication of an Implementation Plan in response to the CST’s 1999 report “Review of S&T Activity across Government”. One of the main recommendations in this Plan concerned the need for a more strategic forward-looking approach to science and technology. As set out in the Plan, departments are currently engaged in preparing science and innovation strategies in line with this recommendation. They will also be reviewed by the CST and by the Ministerial Science Group. The completed strategies will be published to facilitate sharing of information and to encourage cross-departmental working in appropriate areas.
- Launch of the consultation on a new Code of Practice for scientific advisory committees. This has been described in the earlier part of this memorandum.

The Chief Scientific Adviser’s Committee

52. In 1999, the Chief Scientific Adviser’s Committee (CSAC) replaced the Economic Affairs Science and Technology Committee of Officials (EASO) as the regular forum for departmental chief scientists and senior officials with responsibility for R&D from departments with significant S&T activity (including the FSA).

53. Under the CSA’s chairmanship, CSAC’s remit is to consider issues of relevance to the Government and the devolved administrations concerning science, engineering and technology (SET). In particular:

- To provide advice to ministers, primarily through the Ministerial Science Group.
- To discuss and facilitate implementation of policy on SET.
- To identify and promulgate good practice in SET-related areas, including the use of scientific advice in policy making.

- To facilitate communication on particular high profile SET-related issues and those posing new challenges for government.

54. When necessary, the CSA may bring together departments and research councils for the purpose of research co-ordination either through *ad hoc* or standing arrangements. A recent example of the role is the High Level Group on Health Genomics which brings together the research councils, Department of Health and the Office of Science and Technology.

The Inter-departmental Liaison Group on Risk Assessment (ILGRA)

55. The Inter-departmental Liaison Group on Risk Assessment (ILGRA) and its subgroup on risk communication now ensure better sharing of information between government officials and a more consistent approach to risk across departments. ILGRA has promoted new collaborative approaches, fostered research on topics of cross government relevance and provided a network for improving communication between those engaged in risk policy in different departments. In acting as an interdepartmental conduit, ILGRA helps to avoid duplication of effort and promotes “joined-up” thinking.

Devolution

56. Devolution has introduced fundamental structural changes in the government of the UK. Communication with the devolved administrations is an important aspect of joined-up Government. The Government and devolved administrations have all agreed a Memorandum of Understanding that commits each administration to information sharing and co-operation on policy development.

57. Government departments, including departments within the devolved administrations, have been forging closer links to improve co-operation and consultation on matters of shared interest. This includes information and papers relating to the scientific advisory committees in which they have a shared interest and the results of collaborative surveillance and research.

58. For example, the Government has published a number of administrative agreements (concordats) between different parts of government and devolved administrations. These document how they co-operate in relation to policy, science, openness and other matters. For example MAFF has concordats with the FSA, with the Scottish Executive, the National Assembly for Wales and with three research councils. The advantage of such concordats is that they formalise co-operation and information exchange rather than relying on ad hoc bilaterals and other informal mechanisms. Some departments have high-level agreements with the devolved administrations that cover research co-ordination.

59. In a recent initiative, departments are now expected to apply Health Impact Assessments (HIA) to all new key policies. Departments are currently piloting a screening checklist to assess if full HIA are warranted.

Future Developments

60. The Report of Lord Phillips’ Inquiry into BSE made a number of important recommendations about improving mechanisms for co-operation and the sharing of scientific advice and information between government departments. The Government is considering how to take account of these wider points and will address them in its response to Phillips.

February 2001

APPENDIX 2

Memorandum submitted by Lord Whitty, Parliamentary Under Secretary of State, Department of the Environment, Transport and the Regions

SCIENCE AND TECHNOLOGY COMMITTEE: DIABETES AND DRIVING LICENCES: HC 206

Update on Progress made in relation to Committee’s Recommendations

POINT (a)

The UK’s position on exceptional cases for renewing existing professional insulin-treated drivers’ entitlements was to some extent based on the view of the Honorary Advisory Panel. The Panel’s view, however, was influenced by DETR advice that other member states were applying a ban. The DETR now concedes that “information turned out not to be accurate”. We recommend that the Government refers this matter back to the Honorary Medical Advisory Panel for further consideration based on an understanding of practice in other EU countries.

The Government accepted the Committee’s recommendation. The Panel would re-examine its advice in the light of practices across the EU.

1. The Committee's recommendation has been met in full.

2. Information from other member states was obtained and considered by the Honorary Medical Advisory Panel on Diabetes and Driving. In the light of this, changes for drivers of category C1 vehicles (between 3.5 and 7.5 tonnes) are to be introduced from early April. The revised conditions, which have been welcomed by Diabetes UK, will mean the introduction of individual assessment relating solely to medical issues. The need to be employed to drive category C1 vehicles and to have had a minimum period of driving experience will be discontinued. New applicants, and not just those who held C1 entitlement before 1 January 1997, will be able to apply for the entitlement. The specific criteria for a C1 licence will be:

- no hypoglycaemic episodes requiring the assistance of another person in the last 12 months whilst driving;
- attendance at an examination by a hospital consultant specialising in the treatment of diabetes at intervals of not more than 12 months and to provide a report from such a consultant in support of the application which confirms a history of responsible diabetic control with a minimal risk of incapacity due to hypoglycaemia;
- evidence to be provided of at least twice daily blood glucose monitoring at times when C1 vehicles are being driven;
- to have no other condition which would render the driver a danger when driving C1 vehicles, and
- to have been on insulin for at least one month.

3. The Advisory Panel felt unable to recommend changes for drivers of minibuses, large buses and lorries. Their view was that further hard data was needed before changes could be considered. The Panel undertook to look again at the situation in the light of the results of a recently initiated research programme on the effects of insulin treated diabetes on driving. These are expected in 2–3 years. The European Commission is also undertaking research relating to diabetes which will help to inform future European policies.

POINT (b)

We find the rules for medium-sized vehicles as they apply to insulin-treated drivers illogical and inconsistent. We see no reason why the exception for voluntary drivers of minibuses should be extended to those who do not meet the required medical standards for driving larger vehicles.

The Government accepted the Committee's comments and undertook to regularise the situation in consultation with the voluntary sector.

4. Work has begun on meeting this recommendation.

5. The anomaly concerning volunteer drivers of minibuses cannot be tackled in isolation as there are implications for other minibus entitlements to consider.

6. Discussions with the voluntary sector have taken place. It is clear that the application of higher health standards to all volunteer drivers of minibuses will have a significant effect on voluntary operations.

7. In addition, the draft third EC Directive on driver licensing, expected to be published in the next month or so, is likely to propose changes to the sub-categories, including medium sized vehicles and minibuses, and to the application of health standards. It would be unwise to progress plans for changes to minibus entitlement until the draft Directive has been received and considered.

POINT (c)

We consider that the exception for insulin treated professional drivers of small lorries had been applied in an unacceptably arbitrary manner. We recommend that the overriding criterion which should be applied in determining whether or not any diabetic driver should obtain a Group II licence should be the risk of the driver being aware of the onset of hypoglycaemia.

The Government noted the Committee's views but refuted the opinion that the "exception" was applied in an arbitrary manner. The judgement on whether awareness of the onset of hypoglycaemia should be the basis for driver licensing would be considered by the Advisory Panel.

8. This recommendation has been met in so far as the criteria have been reconsidered.

9. The Advisory Panel has re-examined its advice on what constitutes a "very exceptional case"; it also considered the suggestion that hypoglycaemia unawareness should be the overriding criterion. It was agreed that a more robust method for identifying hypoglycaemic problems was needed. The new arrangements for C1 drivers to be introduced shortly will require applicants to check blood sugar levels at least twice a day at times appropriate to C1 driving. Records must be produced to the consultant conducting the annual examination. The Panel will provide advice to consultants on completion of the forms used in the validation of blood glucose records.

POINT (d)

We welcome the planned campaign to raise awareness of the need to declare medical conditions which may affect driving.

The Government welcomed the Committee's endorsement.

10. The campaign began on 1 February 2001.

POINT (e)

We recommend that clear terms of reference be drawn up for the Honorary Advisory Panel, setting out precisely its role in advising Ministers, the limits on the areas it should advise upon and the split between Panel, official and Ministerial responsibility.

A review of the Panel's terms of references was already underway at the time of the Committee's report.

11. All existing and newly appointed Advisory Panel members and Chairs have been issued with terms of reference.

POINT (f)

The current members of the Honorary Advisory Panel have the necessary expertise and experience in diabetes and insulin-induced hypoglycaemia.

The Government welcomed the Committee's acknowledgement of the Panel's expertise.

12. No action necessary.

POINT (g)

We recommend that the Government appoints an expert on road traffic accident statistics to the Honorary Advisory Panel on Driving and Diabetes Mellitus and considers similar appointments to the other Honorary Medical Advisory Panels.

The Government accepted the recommendation.

13. Work on implementing this recommendation has been taken forward.

14. Each of the Advisory Panels has considered how the expertise of a statistician or epidemiologist might be used. It has been concluded relevant expertise would be invited as and when required. A statistician will sit on the diabetes research steering group to ensure that the results are statistically relevant.

POINT (h)

The absence of lay membership on the Honorary Advisory Panel is unsatisfactory. We recommend that the Government appoint two lay members to this Panel and consider similar action in respect of the other Honorary Medical Advisory Panels.

In principle, the Government favoured the introduction of a lay element in the formulation of advice on medical aspects of driver licensing. It undertook to consider how best to give effect to the Committee's recommendation.

15. The introduction of lay members to the Advisory Panels is well under way.

16. All Advisory Panels have agreed to the introduction of lay members. DVLA has begun the process of canvassing for suitable nominations. Diabetes UK has been involved in this process and has suggested several candidates. It is expected that lay members will be appointed to the Diabetes Panel by April 2001 with appointments to the remaining Panels following on shortly.

POINT (i)

We recommend that the Government and the British Diabetic Association jointly identify an insulin-treated diabetic to attend meetings of the Honorary Advisory Panels as a non-voting member. While such an individual should not be as a formal member of the panel, he or she should have full access to panel papers and be invited to participate fully in discussions.

As with recommendation (h) the Government agreed to consider, in conjunction with each Panel, how best to give effect to this recommendation.

17. Action has been taken to introduce a lay member who has insulin treated diabetes to the Diabetes Advisory Panel.

18. In conjunction with Diabetes UK, several persons with insulin treated diabetes have been identified as potential members of the Advisory Panel. It has been decided to give full membership, rather than non-voting membership as the Committee recommended. Access to all Panel papers and participation in discussion will be permitted.

POINT (j)

The arrangements for appointment of members to Honorary Medical Advisory Panels are unsatisfactory. We recommend that the Government establish a fixed term of appointment of no longer than five years, which should be renewable only once. Such a policy although necessary to comply with the rules of the Commissioner for Public Appointments, should be implemented gradually so that continuity is maintained and to ensure that there is no large change in the Panel's membership at any one time.

The Government agreed with this recommendation.

19. This recommendation has been adopted.

20. All Advisory Panel members are appointed for five years with a single renewal where appropriate. All existing Panel members have been made aware of this condition and notice of this requirement is included in the letter inviting new members to serve on the Panels.

POINT (k)

We recommend that the Honorary Panel publishes an annual report and, shortly afterwards, holds an annual meeting with the British Diabetic Association and other interested parties to discuss matters of common interest and to explain any complex recommendations made.

The Government accepted this suggestion.

21. An annual report will be published on the Internet shortly. Comments will be invited and a meeting held with Diabetes UK and other interested parties as required.

POINT (l)

We recommend that the Honorary Advisory Panel's agendas are published in advance of meetings and that minutes be published shortly after meetings, with the privacy of any individuals discussed protected.

The Government accepted this recommendation.

22. This recommendation has been implemented.

23. Panel meeting agendas and minutes are now published on the Internet.

POINT (m)

We recommend that the Government makes explicit the risk basis for road safety policy in respect of licensing of individuals with medical conditions which potentially affect fitness to drive.

The Government accepted this recommendation in principle.

24. Action has been taken to obtain data that would enable risk assessment to be evaluated.

25. An extensive programme of research has been initiated which will cover diabetes and driving, vision and driving and the DVLA database. A paper has also been commissioned on the risk assessment of driving and medical conditions. Further work will begin later in the year on commissioning work in the areas cardiology, neurology and psychiatry.

POINT (n)

The DETR states that independent UK evidence is necessary because the present policy and practices are derived from obligations to adhere to European legislation based on "long-standing expert assessment of the dangers associated with the driving of larger vehicles by insulin-treated diabetics". This assessment does not appear to be supported by any evidence. We recommend that the evidence basis for such expert assessment should be made publicly available.

The Government noted the Committee's views and undertook, in conjunction with the European Commission, to obtain and make available such evidence, where possible.

26. Action has been taken to fulfil this undertaking.

27. From discussions with the European Commission, it is clear that the need for evidence based policies has been accepted.

POINT (o)

We recommend that the scope and depth of the Fitness to Drive Research Programme should be enhanced and adequately funded.

The Government welcomed the Committee's endorsement of the proposed research.

28. This recommendation has been met in full.

29. There are three key areas of research currently underway: diabetes and driving; vision and driving; and an analysis of DVLA's medical database. In addition to providing the basis for risk analysis in the UK, the research will be used to inform European opinion.

POINT (p)

We recommend that the Government reviews policy in the area of licensing procedures for insulin-treated diabetic drivers of Group II vehicles including an analysis of the feasibility of implementing the British Diabetic Association proposals for individual assessments.

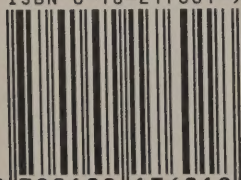
The Government agreed to view the arrangements as recommended.

30. This recommendation has been met in full.

31. The policy for Group two drivers who have insulin treated diabetes has been reviewed. Changes have been proposed as outlined in the answer to point (a). The Advisory Panel examined Diabetes UK's proposal for individual assessment and agreed that they were in line with its own recommendations for changes to the C1 criteria but did not go far enough to satisfy concerns about blood glucose monitoring.

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